

170 Rhodes Avenue,
Akron, Ohio.
January 23, 1940.

Dear Mrs. Tandy,

Please convey the following message to Mr. Tandy.

It is rumored that any correspondence between the individuals in the Akron office and the field representatives in Liberia shall be strictly business.

In as much as the contents of any letters sent through official channels are apt to be cut from a very dry pattern, I am taking this manner of saying hello without a please find preceeding it. I have heard of no by-law that reads to the effect that I cannot write to your wife. You are safely tucked away at a distance and in all probability she would open your personal mail from the states at any rate!

Your safe arrival was welcome news but to tell the truth we had figured that certainly no sub would bother the ship with all those missionaries on board. The Germans would have to change the slogan on their belts if those babies had been drowned.

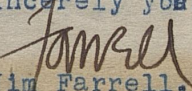
Even tho I am not much of a letter writer, I had intended to add a personal note to the business message. That thought and the aforementioned rumor (due to my perverse nature) adds up to the page in hand.

There is little write about except the weather and the past events occuring in the office. If I wrote frankly about the former, I would have to use adjectives that have been ruled out of the radio programs. The sun still rises at ten A.M. each week Wednesday. The thermometers have turned jitterbugs and the skating is fine if you keep your radiator loaded.

Messers. Pfau and Schmidt and Messers. Runals and Jones have exchanged calls and we have the draft tubes as a result. The generators have been raised and lowered according to who talked the fastest and longest on the day in question. At the present the power house has been sortened and narrowed to such an extent that I am suggesting that you include some latex in the aggregate so that we may stretch it to properly house the final equipment. It must be the association with rubber-- I seem to have stretched a point or two-- as the P.H. is still very much in the preliminary stage above the draft tubes.

Be assured that we will keep the ball rolling in Akron and hope that you get the necessary cooperation on the job.

Sincerely yours,


Jim Farrell.

170 Rhodes Ave.,
Akron, Ohio.
July 22, 1940.

Dear Tandy,

At long last, I shall take the time and put forth the effort to see that you receive the comments on the job which should have reached you from time to time.

During the course of the past several months, I have produced a few pages long hand in the office in the hopes that the remarks thereon would be transmitted to you in one form or another. A few of the same may have been incorporated in messages from Kirby or Runals but most of them never got any farther than someone's drawer or the waste paper basket. The importance of such remarks is, of course, a matter of opinion but, in my estimation, a few comments on the design and the assumptions made to arrive at said design are never amiss.

It is unfortunate that you were laid up with water on the knee. I am in a position to know about that because I contracted the same ailment while playing football as a senior in high school. Altho there was a recurrence each fall, I was on crutches but once after leaving school and have had no trouble with the blankety-blank joint since giving up the more strenuous forms of athletics.

We are having a little of the type of weather that Liberia is famous (or notorious) for as the thermometer outside the window reads 91 at the present moment.

The progress of the job in the Akron office has not been all that could be desired. You may think that all the pitfalls were located in Liberia but the fact remains that it has been no bed of roses at this end. In fact it has reached the point a couple of times where, if it had not been for the sake of Kirby, I would have told them where they could stick the job.

To include a couple of bits of gossip before settling down to brass tacks, let it be known that Sam Symms is now on his "vacation". The quotation marks are explained by the fact that, on Friday, his day of departure; Runals informed him that there was no job at the end of said period. Kirby and family have spent the past two weeks on their vacation. If I live and no monkey wrenches are thrown in the interim, I leave on mine Aug. first. Company regulations allow me one week.

It may be hard to believe from the prints and info that you have received, but the drawings for the job, at least as far as I am concerned, will be completed some time during August.

As you may know, I had to prepare an estimate of time and a proposed schedule of the completion of the drawings that would be required for the project. I did so, using as a basis, the rate of time that I have been accustomed to in other offices. If we are fortunate we will finish about eight weeks behind said schedule. As you have probably noted from the drawings, two men have been more or less regularly assigned to the job. The hydro plant has not received preference except at irregular intervals. This has not helped a schedule that was made with an optimistic outlook so far as the ability of the boys to adapt themselves to a new type of work was concerned. For a time I attempted to confine my time to the design of the component parts and the checking of the drawings. It was not long before I saw the error in this procedure. The job was rapidly losing headway and I was just as rapidly losing my patience. I threw my original scheme overboard and assumed the lions share of the drafting along with the design. The checking and the minor details are being handled by the others. This is far from satisfactory up to date as no one is fully capable of giving an accurate check on the work and the balance of the drafting still claims to much of my time. This is not the entire fault of the individuals assigned to the project as their lack of experience in general, and particularly with hydro electric work, was known to the management. The inaccuracy of the checking is one of my chief concerns. Those invaluable characteristics of a good checker, conception and detail, are entirely lacking so far as I have been able to discover. I have had to recheck all drawings and I sincerely hope that I will be able to catch most of the bugs that do slip in or are left out. Frankly, I think it was a mistake to attempt the job with but one man familiar with the design and drafting. Kirby has not assumed any responsibility for the validity of the drawings except in a general way and I do not blame him at all.

The result has been that I have done a great deal more drafting than in the past few years. Got back in the groove all right but it proved irksome at times. Certainly hope that no serious bulls come to light because I couldn't pass the buck if I wanted too.

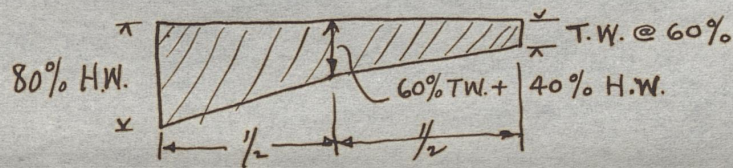
In general, Kirby and I have seen eye to eye on most of the design features (exceptions will be taken up later) but I cannot say the same for the management or the electrical boys. The latter have shown some signs of change of heart recently so I may have to retract somewhat in their case. In both cases they are building their first hydro plant and altho a few arbitrary decisions are not unlikely in any organization, I do not like to see the cost or the operation of the plant penalized by many such decisions.

The following discussion of the component parts of the project will be covered in the approximate order in which the drawings are numbered.

Spillway dam section.

One of the progress reports states that you have had to carry the rock excavation in the vicinity of the dam two feet or more and may possibly go deeper. The section as shown on the drawings for Crest El. 85 and 87 was designed on the following assumptions.

- a) Rock at el. 69 (max. height 16' and 18' respectively)
- b) H.W. el. 99.0 (max. overflow 14' and 12' do)
- c) Net section exclusive of bucket.
- d) Uplift as per diagram below.

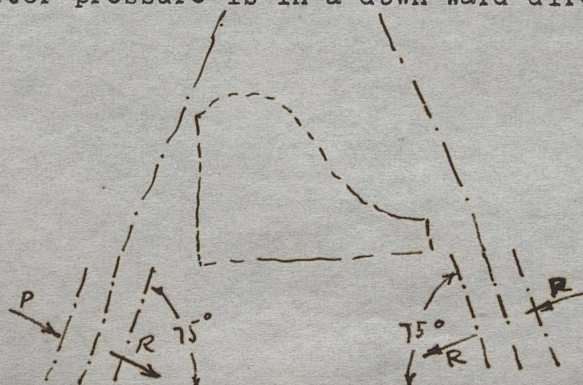


Note that results are in pressures over entire base rather than percent of base subjected to full pressures.

It can be seen from the above that if the excavation is carried any appreciable depth below the design elevation without due compensation for same, the stability of the structure is effected and the factor of safety is lowered. The only method of compensating for the removal of rock below el. 69, in my estimation, is as follows. Excavation to be confined to limits two feet up and down stream from the limits of the pad base shown for elevation 69. Vertical faces of excavation to be maintained as such. Grouting the area immediately up and down stream after pouring the concrete to bring the excavated portion up to el. 69. Grouting to extend a distance from the edge of the excavation equal to threetimes the depth of the excavation and to penetrate a distance equal to twice the depth of the excavation. These distances are a minimum and of course are to be governed by the field conditions. The pressure of the grout should not exceed one and one half pounds per foot of depth of grout hole. Briefly summed up, the rock foundation should be possible of excellent consolidation or the section should be revised to cover the altered condition, if it is desired to maintain the same factor of safety.

I realize that you are fully aware of these facts but in as much as there is a tendency to pass over items like this in the Akron office, it might be well to put something on paper which might be of some use in the near future.

A suggestion concerning grouting in the vicinity of the dam. The grout holes to be drilled at an angle of about 80 or 75 degrees with the horizontal and in such a direction, that, if done both up and down stream, the projected lines of the holes would produce a triangle with the apex over the dam. This will tend to produce a curtain inclined in a direction so that the resultant water pressure is in a down ward direction.



Log boom and Log boom anchor pier.

The log boom (or booms) can be covered by the remark that to date either or both will be installed. The imbedded parts for both have been ordered and shipped but the balance of the material is still a matter of the future.

The log boom anchor pier has been designed without the necessary field data to give a first class and definite design. If the rock is considerably lower than shown on the drawing, the steel will be too short and the additional length will have to be supplied from your steel stock. The drawing is a conglomerate mess in my estimation but in all probability will not be redrawn. The design is based on a gravity section with beam and strut action incorporated therein.

Abutment "A".

The rock elevations assumed for this structure are again unsuitable for a final design. However, it may be that you can use the given elevations if the present rock surface is above the assumed line. It was my ~~hope~~ ^{hunch} that you might prefer to pour this abutment before the orifice bulkhead main section, to eliminate the odd forms at the ends of same.

Bulkead Section.

No remarks except that the statements made pertaining to the spillway apply to this dam section as well.

Orifice Bulkhead.

The foundation of this structure should receive particular care and treatment if the conditions are similar to those in the dam region. The high velocities in its vicinity during floods may not prove dangerous but are not desirable even under the best conditions. The structure was carefully designed but is necessarily dependent on a good foundation. The combination floor armor and reinforcement is an untried scheme of mine and I hope is a successful one. It ought not present any difficulties with the exception that the aggregate size will have to be changed for the final layer of about six inches to insure filling the voids in the armor and providing the required bond. The steel lining and trash rack structure was built next door so I had the opportunity to see one erected in the shop. The lining also had the dual purpose of preventing erosion and supplying the necessary forms.

General remarks about the head water structures should include the fact that both Kirby and I think that there should be a permanent lighting system throughout this area. In fact I had the conduit shown on the drawings and had to remove same when we were voted down. The hand railing scheme on the hydraulic structures I borrowed from the Navy Dept. and think it a good one where a removeable or partially removeable guard is desired. In connection with the installation of the brackets for the posts, I have billed both both kinds of bolts--for imbedment and cinch type. This will provide an optional method for installing same but was really prompted by the fact that so much of the equipment is being placed on the "delay purchase" list.

Side channel spillway, radial gate and canal.

The same assumptions were used for the design of the bulkhead and side channel spillway sections as were employed for the main spillway section. The canal wall, where necessary, and the radial gate pier walls ditto. The radial gate was purchased solely on price and, in my opinion, that is just what we are getting. It may fulfill its purpose but there are features which I can not fully approve of. I hope the field assembly turns out to be an easier job than I have foreseen.

The transition section from rock cut to earth has not been completed to date. I am in hopes that Wilson will bring some data on the rock elevations in the various parts of the job as requested on the white print marked for the purpose. If this information can be had at this time it will mean that we can give a more complete design on the several parts of the work that are dependent on this data.

With respect to your recent request for a derrick of some sort to facilitate the moving of the forms for the dam sections, I tried to persuade them to furnish some device for the same purpose months ago. I had proposed a large derrick in order that it could be used several times before shifting its location and it was vetoed. The derrick you asked for has been ordered and will probably arrive on the boat with this letter. While we are on the subject of derricks, I have also suggested a number of times that a derrick (guy, with 100' boom) would be of great aid in the power house area. With one setup the entire area could be covered handily. You may not care to work with one but it is my contention that it would be invaluable for handling the imbedded steel parts, forms, concrete skips, penstock sections, structural steel frame work, etc., etc.

Proceeding down stream we might take a look at the dikes. As to the samples sent to the Cornell lab, a full report has not reached us yet but will be forwarded to you in full. Therefore, at this time, about all that can be said is that, in part, the report is favorable. As you no doubt have noted, I was successful in selling the idea of well points and piping to furnish a method of checking the line of saturation after the water is admitted to the canal. In the event that the plant is operated before the dam is fully completed, an opportunity will be had for a preliminary check with a partial head on the dikes. If a log is kept of readings taken at regular intervals, a fair indication of the final line of saturation can be estimated. If the intersection of the line with the original surface appears too near the down stream toe of the slope, the dike can be extended before the full head is realized.

Before tackling the forebay and penstock situation, I think I shall get a nights rest. This is one spot where I seem to stand alone on the correct solution for the problem. Kirby has held out all along for the individual penstock scheme. The management has settled on the same scheme but for another reason entirely. For the same degree of regulation, it is the most unweildy and the most expensive form for the full ultimate installed capacity. Kirby has flexibility in mind and the management wants to spend the least amount possible at the present time. I have worked in vain for a single penstock with surge tank. Simplified forebay structure, all conduit work completed at one time and excellent regulation for the least money (TOTAL) Surge tank not required until second unit installed.

A couple of days have elapsed since I last tackled this letter. Today Ross Wilson and the chap from Allis-Chalmers who is to be the erector were in the office. From the pronunciation I heard when introduced his name is Kratz. When I see it in print or writing I may have to revise same.

The photographs that Wilson brought with him and his explanation of them gave a better picture of the job than we had had up to date. I liked Wilson and his straightforwardness. He seems to be well acquainted with Liberia and its limitations. He is attempting his first hydro job however and his method of attacking some of the problems have been different from any I run in to and have lead me to wish that you have not had to cope with a problem similar to the one in the Akron office. I was in hopes that you would be assigned full control of the project and your word would be law. This may well be the case but I thought I detected an undercurrent that would be contrary to such an idea. I hope I was mistaken.

The changes in the alignment of the canal seem to be o.k. but at the present writing have done nothing toward fixing up the drawings to take care of the change.

That is some coffer dam at the power house. Other than possibly underlining the word some, I reserve any further comments except that I hope it comes out easier than it went in.

Nearly every one is surprised at the relatively small amount of earth that has been removed to date. It is to be hoped that they have given you all the men that you can possibly use for the purpose. The photos showed woefully small crews when it is considered that all work of this nature is done piece meal by hand methods.

I had better get into the power house and cover a few of the items there or you will not get this letter on the boat for which the mail closes tomorrow.

I am sorry to make the general statement that the power house is the first one I ever worked on that I do not take distinct pride in having been associated with the design. The arbitrary decisions that have been made are decidedly inconsistent with good design, operation and economics.

1. Any additional length beyond the absolute minimum required for four units was ruled out.
2. The width was cut down by three and a half feet before the overall dimensions of the equipment was known and before we knew whether or not pivot valves would be required.
3. The generator floor was raised to the absolute maximum that A*C would go without another bearing (Jones wanted the generators above max. tail water)
4. The building was raised to a single roof line for the sake of appearance.
5. The system of ventilation for the machines was governed by an architectural rendering and opening sizes pulled from a hat.
6. The conduit system of unit penstocks was adopted for the reasons mentioned heretofore.

It is my belief that the following disadvantages will rear their ugly head long before the ultimate capacity is installed.

The minimum size building will necessitate removeable stairways in order to get full use of the hatch and the untanking pit facilities. This will hamper the installation of the three future units. The accessibility between the turbine and generator floors should not be limited in this manner.

The generator floor at its maximum height above the turbine is entirely unwarranted as the plant could be protected with out adopting this extreme measure. If there is not more vibration than in any plant of recent design that you are familiar with, I miss my guess. The frames and slab have been designed far in excess of the actual loads carried to limit this vibration, but the principle is at fault and far too expensive for the results obtained. I sold them the idea of the steel falsework to aid you making this pour.

The building shape (superstructure) is the most costly type and provides hundreds of useless cubic feet. The roof beams and crane brige girders doubled in size (square of span), the square feet of wall area increased, the ventilation was impaired, the switchgear became a hazard for moving loads (crane), etc. A more valuable building for the same or smaller cost could have been obtained by the addition of a working bay and a divided roof (stepped). I wrangled the space under the transformers but it is in a poor location for much practical use.

I wholly disapprove of the ventilation scheme if it proves to be one. It seems that I do not know the first thing about the matter but I would like to place a small wager on the efficiency of the scheme as it stands to day. It may prove adequate for one unit but from there on I'll increase my odds.

The final length and diameter of the penstocks is still undecided. However, if the final decisions are predicated on the statements which have been voiced recently, I wo'nt give a plugged nickle for the degree of regulation which can be obtained.

To get back to ~~thee~~ drawings, and briefly, as my dead line has sneaked up rapidly, The ring angle at the neck of the draft was added to assist you in lining up the tubes and holding same while concreteing. I had in mind three steel cables with turnbuckles, anchored to dead men or to rock, @120 degrees apart, secured to these angles.

I sincerely hope that the requiered imbedded parts are reaching your hands in time. As you can tell from the bill of material sheets, there is a decided lag in this respect. However, if you are still as far behind the proposed schedule as the report of Wilson indicates, I guess we are in the clear on the delivery.

It is quite definite that I shall hve to end this message on this page. My eyes are closing and tomorrow will not do. I hope that I can get a sequel to this off before I depart for other parts, I start my vacation day after tomorrow and have a proposition on another power job with an outfit I worked for in the past which will bear inquiry. If it is what I would like, I shall hustle things along in Akron and clear out by the end of the month if possible. The forebay and the penstocks are the only real job they need me for now.

Shall close by wishing you and Mrs. Tandy the best of luck personally and professionally during your stay in Liberia.

Farnell

THE Firestone PARK TRUST AND SAVINGS Bank

EDSON A OBERLIN, JR. President
RUSSELL A. FIRESTONE, Vice President
COREY L WILSON, Sec. & Trust Officer
GILBERT NEAL, Treasurer
LELAND V. SLOOP, Asst. Treasurer
JOHN L. LANDIS, Asst. Treasurer
CYRIL B. SHANER, Asst. Treasurer
GEORGE H. LEONARD, Asst. Treasurer
VERNON WOLFE, Auditor

HARVEY S FIRESTONE
FOUNDER

FIRESTONE PARK

AKRON, OHIO

October 2, 1941


Mr. M. F. Tandy
c/o Mr. E. D. Ashley
The Firestone Plantations Company
Akron, Ohio

Dear Sir:

We are in receipt of an invoice from the Competent Fur Dresser's, Inc., covering the dressing of certain skins; amount of the invoice is \$19.50.

If it is your intention that we pay this bill for you, kindly so instruct by return mail.

Yours very truly,



Earl V. Cope, Manager
Savings Department

EVC:CLW
CC: The Competent Fur Dresser's, Inc.
Mount Vernon, New York

Firestone Plantations Company

HARVEY S. FIRESTONE
FOUNDER

HOME OFFICE
AKRON, OHIO, U.S.A.
FOREIGN OFFICES
GREAT WEST ROAD, BRENTFORD, MIDDLESEX, ENG.
MONROVIA, LIBERIA, WEST AFRICA
HONGKONG BANK CHAMBERS, SINGAPORE, S.S.
CABLE ADDRESS:
FIRESTONE
CODES:
BENTLEY

MONROVIA, LIBERIA,
WEST AFRICA

October 6, 1941

Mr. M. F. Tandy

Dear Sir:-

As compensation made solely for personal adjustment in Liberia during this period of national emergency, the Company will, beginning with the month of October and monthly thereafter until further notice, pay into your account with the Bank of Monrovia, a temporary allowance of £6-0-0.

This allowance is not retroactive, is subject to discontinuance at any time and, for such period as it continues, will be paid only during service in Liberia. It shall in no way vary the terms of your employment contract or be considered as a part of your compensation under that contract for any purpose.

Very truly yours,

FIRESTONE PLANTATIONS COMPANY

By... *G. H. Seybold* ...
General Manager

GHS
ASM

Firestone

INTER-OFFICE

TO Messrs. Wilson, Tandy, Tengwall,
Steen, Kline, Godley and G. G.
Campbell.

FROM Mr. G. H. Seybold

REFERRING TO LETTER OF

SUBJECT

April 27, 1942

Y b n b T
I am advised that it is against Company policy to issue letters of recommendation to employees, either actual or former. Such letters may be written only in reply to inquiries from prospective employers.

Please observe this policy which is especially applicable now in view of the imminent departures of a considerable number of the staff.

G. H. Seybold
.....
General Manager

GHS
ASM

F85

JUN 8 1942

LC FIRESTONE PLANTATIONS MARBEL

FOLLOWING FOR TANDY FROM MRS TANDY QUOTE ADDRESS MAYFLOWER

APARTMENTS UNQUOTE

FIRESTONE PLANTATIONS

M. F. Tandy ✓

N. L. Isadley personnel

D-246

JUNE 15 1942

NLT FIRESTONE PLANTATIONS AKRON
DEPOSIT SX200 FIRPABANK CHECKING FOR TANDY TRANSFERING CREDIT
JUNE B3 SEND NOTICE OF DEPOSIT TO MRS TANDY

FIRESTONE PLANTATIONS

M F Tandy

J E Lanton

W L Bradley

6-9-42

U162

NLT FIRESTONE PLANTATIONS AKRON

BM ROBINSON

TANDY WISHES THESE TO BE HELD PENDING MY ARRIVAL REGARDS

LARABEE

M.F. Tandy

G.H. Godley personnel

AKM

Firestone

June 29th, 1942.

INTER-OFFICE


TO Mr. M. F. Tandy

FROM J. S. Wood, Jr.

REFERRING TO LETTER OF

SUBJECT

The sample which you delivered to me for analysis on June 27th has been examined. The bulk of the sample is a black material resembling bakelite or hard rubber. This occurs as a fine powder or in thin flakes. Careful examination of the latter under a hand lens shows the presence of a thin layer of a greenish material which occurs on one side of the flakes only. The greenish material dissolved in concentrated hydrochloric acid. The solution gave positive tests for copper. The soluble material is believed to be a basic sulphate or chloride of copper.



J. S. Wood, Jr.

CC Dr. T. A. Tengwall
" For File

F173

JUN 15

LC FIRESTONE PLANTATIONS HARBEL

U161 INSURANCE COVERED

FIRESTONE PLANTATIONS

H. S. Bradley
M. G. Lindy

e

E444

May 25

NLT FIRESTONE PLANTATIONS HARBEL

FOR LARABEE

RECEIVED TODAY TWO CHECKS SX750 EACH FROM TANDY EST TE PAYABLE
YOU AS ATTORNEY IN FACT FOR MILAM AND WIFE RESPECTIVELY STOP
WILL HOLD YOUR RETURN UNLESS YOU READIO AUTHORIZING ME TO
ENDORSE AND DEPOSIT AND INSTRUCT EONS STOP B M ROBINSON

FIRESTONE PLANTATIONS

BH LARABEE

M F TANDY ✓

H G GODLEY PERSONNEL

F63

JUN 5

LC FIRESTONE PLANTATIONS HARBEL

U29 REFER INSTRUCTIONS WARRISK MUST HAVE SHIPPING MARKS

FIRESTONE PLANTATIONS

H. L. Bradley

M. F. Jandy ✓ to advise Markings Urgent

E23

MAY 1

PR

NLT FIRESTONE

FOR TANDY STOP ADDRESS OF MRS TANDY IS 1008 WESTONER AVE NORFOLK
VIRGINIA CARE OF MRS V T CHURCHMAN

FIRESTONE PLANTATIONS

cc: M. F. Tandy ✓
W. R. Hall