no. 5

THE AMERICAN PLAN

No. V

TRAINING THE KEY TO ITS FUTURE

FOREWORD

There was never any doubt in the minds of those who set up this American Plan of ours that its future depended upon the training of youth. That training must include an understanding of the aims and spirit of the scheme as well as of its machinery. It must arouse a sense of responsibility towards working the Plan out - willingness if things are going wrong to take bearings - correct their course.

More and more clearly it has been seen that this training is the business of all the institutions converned with youth:- the family - the school - the church - the trade, business or profession - each in turn had a direct responsibility for making him fit for his job and a self-directing, self-supporting citizen in a Democracy. If one fails in its obligation work of the others is more difficult, possibly ruins the chance of getting a sound citizen.

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Years since the industrial system began to evolve its educational obligation has become clearer and clearer. Self-interest has convinced the industrialist that if his undertaking is to live and grow it will because he has consciously prepared others to carry it on after he is gone.

We have a large number of industries in this country that have lived fifty, hundred, some even a greater number of years, largely because the founders have trained men to carry on. That is, industry is accepting as one of its functions to make men as well as money. This article tells of what has been done in one Industrial Institution. The principles on which it is working are as good for families, for colleges, as for factories.

Ida M. Tarbell

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Under the American Plan

No IV

Via Ivanhoe the Key to the Dolomites

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Dreiser

There was never any doubt in the minds of those who set up this American Race of ours that its welfare depended upon the training of youth. That training must include an understanding of the aim & spirit of the republic & the relation of its machinery to it. It must be responsible towards ~~the~~ each ~~in~~ ~~the~~ hands working for it & willing if this ~~was~~ were going wrong to take ~~the~~ steps to correct ~~the~~ course.

Time and time clearly it has been seen that the training of the children of all the inhabitants concerned with youth: — the family the school — the church — the trade business & profession — each in turn had a direct responsibility for making ~~the~~ ~~relation~~ him fit for his

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As the years have gone on since the industrial system began to involve its educational obligation has become clearer and clearer. Self-interest as well as a desire to contribute to the stability of the country has burst upon the industrialist. If his undertaking was to live and grow it must be because he was consciously preparing those who had come into his business to carry it on after he was gone. Study the successful industries of this country and you will find that those who have looked inside for the material to carry on have sought intelligent means to develop that material that have been the most successful.

We have a large number of industries in this country that have lived fifty, hundred, some even longer years. And it is because of the inside training that the leaders have given as well as their alertness and sensitiveness to change in industrial conditions, to new methods and new ways of doing things that has kept the business alive.

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If one fails in the duty devolved upon him by the rules of the House in the performance of public duty - possibly ~~ruins~~ ~~ruined~~ his chance of getting a second chance.

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Ida M. Tarbell
120 East 19th St.
New York City

Of all the things men build for their convenience and their profit few are better loved than their Bridges. Reason enough for this. Bridges shorten journeys, ease hard going. Added to their usefulness is the marvel of their design - the beauty of their line.

Last September a bridge was opened to this Nation which has all these qualities and more. It is a splendid and deserved memorial.

Cutting from the Lincoln Highway one of the most vexatious and difficult Valleys on all its long route from coast to coast that of Turtle Creek just East of Pittsburgh, Pennsylvania, this bridge of which I speak, fully a mile in length, wide by forty two feet and long by two hundred twenty feet spans the chasm in great five concrete arches, the central one the largest in America.

The George Westinghouse Bridge it is named and fittingly enough for at its feet along Turtle Creek lies the parent plant of the proud Industrial Institution known

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as the Westinghouse Electric and Manufacturing Company.

It is now about forty years since George Westinghouse picked up the small machine shop he had started some years before in Pittsburgh, and later adding to it his latest undertaking - an electric company - put them down in Turtle Creek. If you look down now from the floor of the Bridge on the plant which has come out of that modest beginning you will be told that it owns one hundred and ten acres of floor space and is only one of the greatest of twenty plants under the same name - plants scattered from one end of the country to the other and sending their 300,000 products, everything from adhesive tape to giant turbines, all over the earth.

Why do the undertakings of some men live on long after they are dead and gone, not only live but grow in stability, usefulness, dignity, while others with apparently as sound a base, as good a hope are only names in the annals of their day? If you seek the answer to that important question in the plant below the Bridge over Turtle Creek you will find it to be two-fold, at least I did.

First, the fact that in some miraculous way George Westinghouse, himself, now dead eighteen years, still lives and invigorates the place.

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Second, that as years have gone the system of training upon which the continued life of all industrial institutions depends has been steadily broadened to meet both the social and the technical progress of the Day.

George Westinghouse - what he did and the way he did it - is the key to the place. His achievements make ~~marvel~~ exciting stories. There is the story of the air brake, the way it was born and by years of determined fighting and working, perfected into the greatest contribution to the safety of the railroad ever made. The sight of trains in collision with all its horrors, commonplace in the days of the hand brake, determined George Westinghouse then around twenty to find something that would work. In 1869 he ~~wrote~~ took out his first patent for an air brake. It was the beginning of years of trials, defeats and corrections but never discouragement, never loss of faith that in the end he would perfect his ideas. He did but he took out forty patents the last twenty three years after the first before he had his system to his and the public's satisfaction.

What a lesson in seizing your hunch! Don't think that those who train youth in the Westinghouse Institution neglect the lesson. They keep alive a Suggestion Department - over 7700 different ones were turned in in 1931 - for the recording of hunches. Seize your hunches and be faithful to them in their creed!

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It was with the air brake Westinghouse began - the "Daddy of us all" - the old timers on Turtle Creek call it, but he did not end with the air brake. That all important fact they somehow keep alive.

Certainly the visitor is not allowed to forget, properly enough that it was here in these very shops that the royal battle of the currents - direct vs alternate - Edison vs Westinghouse-was carried on in the '90's.

I once had the good fortune to talk with a man who went as a boy with George Westinghouse forty six years ago, a stenographer determined to make an engineer of himself. It took eleven years, but he did it, and in the meantime he had the close contact with Westinghouse himself which a small plant and the informal ways of the day permitted. This man, George McClelland, still active in the plant believes that the way Westinghouse worked in those days is the way men must work now if they are to do big things in industry. He recalls the day in 1892 when Westinghouse came home with the contract for lighting the Chicago Fair in 1893 in his pocket - using the alternate current. He came back with a contract that meant building engines such as had never been built before - greater horse power - higher speed - and he wanted them the next day!

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"Westinghouse is a damn fool, it can't be done," the designer said." But he had his pencil out as he said it," McClelland tells you.

"That was Westinghouse. He put us on our metal, asked the impossible. Remember back in '93 there were limitations on material we don't know today. We had none of the steel of today. We sent those engines out to Chicago in pieces, hard to handle, for we had no cranes in those days, no drill plates. They had to be riveted together out there. Engineers said they wouldn't work, but they did and ran through the whole Fair without an accident.

"You see the Old Man always put it up to young men. The result was that every job was a challenge and as the staff was small everybody was in on it. Nothing like that now. A job now-a-days has four wheel brakes on it."

"On, I don't know," broke in one of the group. "What was that order Pop Kennedy put through the other day?"

And they called him in - for many years now Superintendent of the Machine Shop. It was hard to pick the story out of him.

"Just another job," he said.

But it came out that on a Saturday forenoon a few weeks before it was announced that if the shop could lay down in a certain Ohio town in ten days time a sizable order

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for machines having to do with steam shovels for the Hoover Dam, why the order was theirs.

"It's a buyer's market these days," broke in one of the company grimly. "You don't bargain, you accept the impossible."

It was, as I have said, a Saturday morning. The pattern makers were on a picnic. They were opening their beer and attacking their pretzels when the news came of the order. They left the bottles where they were and hustled to the plant. Before Sunday morning the patterns were ready. That day the casting began and by Wednesday night the machines were ready to be packed into the waiting trucks. Arrangements were made for an open road and at eight o'clock on the next Thursday morning they knocked at the gates of the Ohio plant.

"Here are your machines," the driver said. And the answer is said to have been, "You lie. It couldn't be done."

But it had been done.

"Only another job," said Pop Kennedy.

"That's the way we always worked under the Old Man," said George McClelland. "That's the way the average man likes to work and will work if you let him in. All we need is leadership. Men will follow anywhere if you show them a well

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defined aim. They understand, too, how each depends on the other, how if the pattern is a flop the casting will be a flop. Give them a look in - a share in the undertaking and nothing can stop them!"

There is no doubt that was George Westinghouse's philosophy,and as far as was possible for a man who worked as hard as he at so many different things and in so many different places, his practice. His philosophy and his methods, his "battles" for his air brake, for the alternate current, for anything which to his sensitive and quick acting mind "had something in it" - his willingness to spend years to develop or prove undevelopable, his ideas - these are all still today a quickening back ground in the concern which bears his name.

But how carry on a personality, traditions,like these - build on them? Well, you must believe that are personalities and traditions ~~and~~ are worth perpetuating. In Westinghouse they do believe this. Listen to the President, Frank A. Merrick, talking to the young men coming on in the concern. "A man needs to know not only his own specialty, but must be able to appreciate it in perspective." By which I take it Mr. Merrick means that if you are going to "get on" you must see the whole of the thing you are in, how it came

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into being, how it grew. Particularly must you understand the men who are carrying on the traditions, keeping them alive.

How do they do it? Education. Westinghouse has as good a home-grown system as I know in industry and one from which institutions of all sorts, colleges and churches, shops and social agencies, bent not only on training for present needs but for future life could all learn something.

Their system (of which more later) includes a course in the Early History of the concern. If you are on Turtle Creek you can take the course in one or another of the various schools for training which have developed as the place developed. If you are in the field - in a distant plant - then there is a "correspondence course" which spreads this growth before you like a Historiograph Map might and on this map you see the entrance and the advancement of the multitude of men who have led in one or another of the departments essential to the life and making of the industry.

There is Mr. Merrick himself. How did he come in and on in Westinghouse?

The History of the Correspondence School tells you. Back in the '90's Westinghouse had ~~found a~~ trouble - with a competitor - in the street railway business ~~in~~ the Lorain

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Steel Company. He accused them of infringing his motor patents, but so the History tells us, Lorain was able largely "through the ingenuity of their engineer, Frank A. Merrick, to dodge around the patents as fast as they were sustained." The result was that in the '90's Westinghouse bought out the assets of the Lorain Motor Department. While these patents and physical assets were valuable, "the most valuable asset was F. A. Merrick, who, pending the organization of the Canadian Westinghouse Company, Ltd., of which he became Vice President, spent some time at the Pittsburgh Works. During the War, Mr. Merrick was "borrowed" from the Canadian Company to superintend the production of rifles and firearms at the factories of the New England Westinghouse Company. In 1925 he was elected Vice President and General Manager of the Electric Company and in 1929 became President."

As fast as a man comes to the top in the organization he goes into the "course." The latest acquisition is the Chairman of the Board, Andrew W. Robertson, who came into that great office in January 1929 (a fine year to put a big financial job up to a man!)

Mr. Robertson came to Westinghouse from the head of what is known as the Philadelphia Company - a public utility - which with its subsidiaries gives light, heat, power and

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transportation service, not only to Pittsburgh but to all the Southwestern corners of Pennsylvania and the North Eastern Corner of West Virginia.

"Westinghouse," said those who did not know the story of the Philadelphia Company, "has had to look outside of itself for a chairman." But when they said this they did not know or had forgotten that the Philadelphia Company was one of George Westinghouse's characteristic exploits.

Some time in the winter of 1883-84, Westinghouse who was passing the season in New York City, read in a home paper of the successful use by a factory near Pittsburgh of natural gas - a new cheap fuel. As soon as he had returned he started drilling a well in his own back yard. One night when they were down about 1600 feet Westinghouse was all but blown out of bed by a terrific explosion. They had struck gas! He hurried out to find his garden, lawn, flower beds, deep in mud, gravel and oil.

He had his gas and he determined to make a public utility of it, but for that he must have a charter. Looking about he found one cheap - a blanket charter - covering any enterprise! It had had a spectacular career but that was neither here or there, Westinghouse bought it - The Philadelphia Company it was called.

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From that time on Westinghouse gathered one after another of Pittsburgh's utilities into the Philadelphia Company, managing it until in 1905 he sold out.

The future history of the Philadelphia Company - a stormy one - is no part of this story save that it was in one of its re-organizations that Andrew Robertson, a young Pittsburgh Attorney, became connected with its legal staff.

Robertson like most Westinghouse men had had his way to make in life - a farmer's son, one of nine children, he had worked his way through Allegheny College in Northwestern Pennsylvania - He now is Chairman of its Board of Trustees - studied law in Pittsburgh running a boy's school meanwhile - admitted to the bar in 1913 he soon made a place for himself and when in 1924 the Philadelphia Company underwent a re-organization he was made a Vice-president, later President. That is he headed a concern which George Westinghouse had started and run for twenty one years and what he had done there had convinced the interlocking banking interests behind the two concerns that Westinghouse could hardly find a better Chairman. They could not have chosen one with a more liberal outlook if we are to judge it from the "principles and practices" which he laid down when he took office as the base for his management.

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Here are items condensed:-

"The management proposes to furnish to all those interested in the Company as complete information as possible regarding its business.

"To be open-minded in search after all the facts, without regard to personalities or previous practices.

"To recognize mistakes when they are demonstrated by results.

"To give due credit to subordinates so that subordinates may be recognized and rewarded and so that men of capacity may be promoted and retained in the organization.

"Not to follow blindly any fixed rule of age in selection of men, believing that mental youth is a better guide than age in years in the selection and promotion of members of the executive staff.

"To recognize the supreme importance of employe welfare and loyalty to the success of the Company, and therefore, to support and promote all reasonable plans for improvement of employe selfare.

"To acknowledge the essential role played by research in the development of technical industry and that the research work of the Company should be supported to the limit of its resources.

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"To realize that the most efficient organization is a live and growing one, in which some changes are continuously being made. However, many changes, particularly of executive personnel, must be followed by periods of repose, for consolidation of gains and adjustment to new conditions, if they are to produce best results."

No better way of helping a young man to appreciate the organization into which he has come "in perspective" as President Merrick advises could be devised than this keeping the men who made and who carry the institution, real, living, acting human beings. The degree to which this is done in the Westinghouse Educational system seems to me to be one of its most stimulating features.

It is a good system, as good and highly developed as is perhaps possible in the present stage of Industrial Development. It seems to be based on a belief that the concern will grow in proportion to its ability to detect, train and give free opportunity to the latent talent of all the various types that a great industry demands and it knows very well from its own history that the germ of that talent may be hidden under the most unpromising exterior that knocks at the door of the employment office seeking a job - "any kind of a job."

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The boy or girl goes in to feed a machine, to file cards, to copy orders, but it is not only his daily output and its quality which concerns his boss. He is a personality and so he is measured, followed, and perhaps for the first time in his life he comes to realize that here is somebody really interested in him. There is his health - a physical examination - advice - "you need glasses" - "arch supports" - "tonsils out" - care in case of accident, illness. Even his lunch is a matter of concern!

Very interesting to see how in all our better grade industries one of the functions of management these days is running restaurants - such is the value to the output itself of nourishing food at midday. From the Westinghouse Bridge over Turtle Creek you look down on a restaurant which will feed three thousand workers at a sitting - at cost - and this in addition to various small lunch rooms scattered over the one hundred and ten acres of floor space.

This interest in the newcomer goes beyond health he soon learns. It includes his social life - George Westinghouse began it. He wanted those about him to be happy. If he drove them he took time to remember them, at least at Christmas. When there was but a handful in the

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shops and men called each other by their first names he sent them each a turkey at Christmas. It was the recognition of the value of good feeling, of the value of keeping alive the social sense in any co-operating body and from that Christmas turkey has grown a big and diversified program of activities. The workers, themselves, have been largely responsible for their start - the company "aiding and abetting." There is a Club House with pool and billard rooms, library, twelve tennis courts. There are musical organizations, orchestra, chorus, bands - and an annual picnic that draws into the thousands! Like the turkeys the company picnics started with George Westinghouse and he never missed one in the early days if he could help it. The doctrinaires laugh at Company picnics. That is because they know so little of men and women and what makes them happy which is of course the stumbling block which wrecks so many fine doctrines! An annual event to which these hundreds of men, women and children, sometimes as many as 35,000 of them - look forward eagerly, talk of long afterward cannot but be a happy thing for them - and they are the ones to be considered.

What this all amounts to in the case of many an ignorant youngster is that he finds that he has stumbled into an

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organization which considers him as a person and if he recognizes and answers to this interest it offers him training, training which if he will submit to its rigors may carry him to the top in any one of its various departments.

There is a technical night school to which both men and women are admitted, to which if you are so disposed you can take a four year's course in the fundamental principles of electrical and mechanical engineering - a four year's course in accounting and business administration - a two year's course in English and Americanization. For women there are special courses besides the three year courses in commercial subjects. These include calculating machine operation, courses in dictaphone operation, advanced dictation, history, practical psychology, handicrafts and cooking.

This school has a fine standing in local educational circles and its graduates have been scattered all over the country. But more special training is provided - graduate engineering courses, technical training in the High Schools - a four year apprentice course for young men who have completed a grammar school training.

There are extension courses for those that are in the field. There are noon lectures, there is a library, there

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are scholarships and there is a fine research library. That is, here is a highly developed system of training for the young man or woman who finds himself in any position in the concern and the farther he goes the more keenly he will be aware of the interest and the backing of those who direct his particular department.

In its higher graduate courses in engineering and research the schools respect the ideas, the experience and the devotion of one of the greatest of Westinghouse engineers - B. G. Lamme. What the concern thinks of him as a teacher as well as an engineer is shown by the pains they have taken to keep him alive, for scattered about the library and the offices you find a fat volume published by the Westinghouse Electric and Manufacturing Company - a collection of Lamme's engineering papers essential to one who wants to trace the course of electrical engineering and what is more to the point two of the most forthright and sensible papers on training for a profession - any profession I know. They are the conclusions which Lamme reached after years of experience with the training of young engineers.

Lamme, himself, started in at the bottom of the Westinghouse Machine Shop. He had come out of college in

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1885 with the degree of Mechanical Engineer and a passion for figures. A little later he "shot his first arrow into the air" - a letter to George Westinghouse of whom he had read something in a paper. Two or three days later came a reply telling him to report to the Philadelphia Company in Pittsburgh. He did so and the report was that soon after he was taken into the Westinghouse Electric Company where they set him to polishing brass at $30.00 a month!

But Lamme couldn't keep his figuring talent quiet. He wrote formulae - made calculations unconsciously on the margin of the papers at hand. His boss discovered with awe that the boy "knew calculus." The discovery found its way in some mouths to the plant superintendent. He called him in, quizzed him and finally told him that he had been thinking for sometime that electrical machinery ought to be calculated and results predicated as was done in mechanical designing, but he had nobody in the shop who understood figures well enough. "Would Lamme try a problem?" Lamme seized it, delighted his boss by his result, and a little later it was on his calculation that the first successful Westinghouse electric motor for street railways was made.

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The boy was off. He spent many years after his start in the analysis of electrical machinery and in the development of methods of calculating it. Much of his work was done at night. "Counting from 1890," he says in his autobiography which is one of Westinghouse's text books, "I averaged probably three hours per night, five nights per week in such work, developing methods and checking results with practically all apparatus available, both alternating current and direct current, until I felt reasonably sure that I had covered the problem completely."

As Lamme's work developed he in turn took on boys turned over to him as assistants. He saw the time had gone by in the growing concern when it was practical to start a college trained boy at polishing brass. There must be a system and he set out to develop one in his department. In doing this he became convinced that the majority of the youths who came to him from the college had no clear notion of what they wanted to do - no power of decision. The college had educated them for a particular work without finding out before hand, or finding out en route, that they were unfitted for it. They left that for industry.

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Lamme made up his mind that he was not going to do the work that he claimed should have been done by parents and teachers. He finally refused to take on a youth that did not come with a zealous determination to be an engineer. He liked best the boy that had tinkered and invented from childhood up. That was what he had done.

"If a child shows an aptitude - an interest in any activity," says Lamme, "he should be encouraged; if he "sees things", attacks things in original ways, he should not be laughed at but spurred on and directed."

Most emphatically did he insist that the college should give a good broad training in fundamental principles. It is worth much more than anything else - no speciliza-tion but basic principles. "Don't confuse them with theory," he says, "fact is basic and does not change. Theories change many times."

Lamme's joy in calculation - in testing - in discovering was too great for him ever to keep his findings to himself. The jealous-minded about him warned him that his superiors would "pick his brains" and having done it throw him out. They warned him that he would suffer in the long run by pushing his young engineers ahead as he did - they would elbow him out. He scoffed at both warnings.

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"I have found that this education and training of the young engineers has been of extreme value to myself," he once wrote, "for it has been the means of bringing me into very close contact with all of them in later years, enabling me to keep in closer touch with their ideas, their ways of thinking and the results they obtain. If a man has shown signs of growing rapidly, I have encouraged him to the utmost. In other words, I have not allowed any personal jealousies or feelings to enter into this matter. On account of this general attitude, moreover, I believe the engineers of the Company, as a whole, have shown extreme loyalty toward me in all matters."

One can understand from these glimpses of Benjamin Lamme why the publisher of his autobiography should have written on the title page for Westinghouse students to ponder:-

"He viewed hopefully the hitherto unattainable."

And printed opposite the portrait which serves as a frontispiece to the book the following from its pages:-

"In my thirty-five years of work with the Westinghouse Company I have seen many young men grow from pupils to assistants and associates. This has been one of my greatest pleasures. I have aimed to instill in them fundamental ideas of engineering, honest and honor, square dealing and fair

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fighting - that there should be pride in accomplishment because true engineering means much more than merely making a living; it means advancement of the art for the benefit of mankind."

Schools founded on such fundamental ideas as these do far more than perpetuate the institution which has built them up by fifty years of effort; they spread themselves through the youth; they extend into the country.

The principles, the methods, go on broadening and ripening and the place is kept more or less on its toes by dramatic and revolutionary discoveries like those that made George Westinghouse so dynamic throughout the days of his life.

There is the contribution that one of its engineers, Dr. Frank Conrad, has made to radio broadcasting - a characteristic Westinghouse exploit.

When we came out of the war the extraordinary system of wireless, or radio telegraphy, which had been built up depended everybody believed on the use of long, very long, waves. Marconi had tried short waves, discarded them, they would not carry far enough, and that was the general notion of those working with radio. However, Dr. Conrad had been trying from his home laboratory the local broadcasting

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of musical programs on short waves. Nobody took it seriously until a Pittsburgh Department Store had the bright idea of offering its customers cheap receiving sets to pick up Dr. Conrad's concerts.

At this the management took hold. If Conrad could on his own give concerts which Pittsburgh people would buy machines to listen to why should not the field be extended - why should not news be broadcasted. And the first broadcasting station, KDKA, was installed on the roof of one of the Turtle Creek plants. It was from here on November 2, 1920 returns of the election of President Harding were sent out. Dr. Conrad went on with experiments gradually extending his field, even to England. But the radio companies of the world paid little heed to what he was doing until in 1924 the leaders - Americans - British - French - Germans- met in London to discuss the development of communications with South America. They considered only the use of long waves - tremendously long - thirty to sixty thousand feet. It was a staggering proposition to finance.

Now Dr. Conrad was at the conference with his short wave receiver, less than a foot square, in his suitcase. The night after he had listened to the disturbing discussion on long waves and the cost thereof he set up his little receiver in his hotel room and was soon listening to the

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voices of his colleagues back in Pittsburgh four thousand miles away. The next day he proved to the Conference what he could do. That was the end of the long distance wave as a necessity in long distance communication.

"Nobody thinks now," says Dr. Calvin Lee, of the Westinghouse Studios, "that ten years ago one man single-handed disproved the accepted ideas of all the radio world and turned the whole course of radio development."

An industry which carries on such a system of training as this I have been sketching not only insures its own stability, it makes a great and needed contribution to insuring the future of our American Plan.

The hope of that Plan lies today more even than at its start in the training of youth. Let a country try a form of government new and revolutionary in its world as Russia and Italy are doing today, as we did in 1776, and there is never a question but that it will live and grow according to the following of its youth. Youth rises to a fresh start which promises a better day for the world with the spirit of the Crusader. Their zeal is holy, their willingness to sacrifice eager and endless. Russia and Italy are kept going today largely because of the tremendous enthusiasm of youth - the devotion to ideals.

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which the leader has been able to convert them.

They are experiencing now something of what the Sons of Liberty who made our Revolution and set up our American Plan experienced.

But how keep the hope, ~~xxx~~ the will to sacrifice and the faith in the scheme alive? Training - more training and still more training based on "fundamental principles" like those which Benjamin Lamme set down is the only road, for on those principles a Plan like ours must in the long run depend.

And the training must be given by institutions which recognize their responsibility. Industry here and there in this country is seeing this high function and trying to discharge it, not only for the sake of its own present vigor and its own future life which is essential, but to help lead the way in keeping up the vigor and the [illegible] of the American Plan.

The next and final article of this series deals with the electric community necessary to carry such an experiment in industrial co-operation - planning & education under which each person [illegible]

Digital Image, 2012. The Ida M. Tarbell Collection, 1890-1944, Allegheny College Pelletier Library