

SOME EXPERIENCES OF MR. L. L. SUMMERS
WHILE A MEMBER OF THE WAR INDUSTRIES BOARD
DURING THE WORLD WAR.

May 15, 1924.

I have no illusions as to my knowledge on the subject. As Colonel Ferguson says - it would take fifteen years to enumerate the experiences of the past war.

You have had an opportunity of examining the work which was done so that you are familiar with the actual facts. You have the public support and public enthusiasm to carry on your present work.

Have you a record of what was actually purchased in the war? Find out and have a complete list of what you are to require. Let it be a history. Even though this country entered war two and one-half years after Europe, we were unable to help industry, and industry had to teach itself how to produce the things needed. There was no production, although the Army and Navy gave all assistance possible.

It seems to me that of the many points that arose in the war, which have been difficult to settle and which should receive your most careful attention, is your form of contract, which is, perhaps, the most involved and will be subject to the most criticism. It is almost impossible to let contracts in the ordinary war - by fixed prices - which upset the country. The cost plus contract is the best because when the goods are needed we must either pay for them out of the Treasury or with human life.

There is a tendency to say that every dollar taken could be recovered by excess profit tax * * . An excess profit tax is an economic fallacy. * * Start in by fixing the prices of as many commodities as possible.

Due to our late entrance in the war, nearly three years after it had been in progress, munitions makers had practically monopolized all industries that in any way had a direct bearing on the prosecution of the conflict. Prices had gone up by leaps and bounds. Options were asked and taken on all raw materials. This tended to give an additional boost in prices.

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Negotiations were entered into with a New Jersey firm for 5,000,000 rounds of ammunition. This firm immediately placed options on all materials entering into making this quantity with the idea in view of making a tremendous profit in the transaction. The contract was held in abeyance until we could get more information as to the probable price of the raw materials and whether they would be available. They looked the field over and found other firms that would undertake the contract at a lower figure, provided the Government furnished the raw materials. By jockeying the New Jersey firm in this manner we were able to tell them just what we would be willing to pay instead of letting the contract at their figure. We afterwards decided not to place any contracts where the contractor depended upon the open market for their materials. This resulted in the tumble of prices due to the fact that our Government was the only one in the field actually buying the raw materials.

Early in the war an agreement had been entered into between agents of the Federal Government and representatives of the copper industry whereby the copper demands of the Government were to be supplied at an initial price of 16-2/3 cents. The market price of copper at the time this price was agreed to was about 32 cents. The copper interests were actuated purely by motives of patriotism and the instance is outstanding as a precedent which was, to a greater or lesser degree, followed by the most important and powerful distributors of raw materials throughout the country.

We encountered difficulty in using these cheap raw materials to the best advantage, which is illustrated by your endeavor to place contracts with the Winchester Arms Company. This corporation had secured options on large quantities of all the raw materials required in the manufacture of the items of ordnance we wanted them to make and at the much higher price than the Government would have to pay for the same materials. The Winchester Arms Company refused to use 16-2/3 cents copper, preferring to use instead copper already contracted for at 32 cents. Thereupon the War Industries Board laid down a fixed and paid rule to the effect that no contract for munitions would be placed with any firm which would not agree to accept and use only such raw materials as might be furnished by the Government. Eventually, this rule was applied generally with practically no opposition.

Shortly after the War Industries Board guaranteed the price of nitrates and faced a heavy governmental loss in supplying the commodity at the guaranteed price, a most unexpected and dramatic occurrence came to its rescue. The Navy Intelligence Service picked up a radio message from Chile to Berlin stating that Chile was facing a depreciation of her paper currency because her gold reserve was held in deposit in Berlin, and that she wished to secure her gold. Later a second radio message was picked up from Berlin stating that Berlin was both unable and unwilling to return Chile's gold reserve. This fact was of the utmost importance to us. The War Industries Board at once entered into negotiations with the President of Chile. Out of the conference came an agreement that the United States would restore Chile's gold reserve to her, delivering the gold in Chile. In return, Chile agreed to confiscate the German-owned nitrate in Chile and sell it to the United States. Also, they agreed to give us the advantage of an immense price concession. England was then paying 17 shillings for a unit of Chilean sodium nitrate, and faced the prospect of 25 shillings in the near future. Under the agreement we secured the same quantity for 10 shillings and sixpence. The savings from this one transaction alone was sufficient to more than pay for the Muscle Shoals project.

One of my tasks was to meet Mr. Strauss of the Treasury Department once every two weeks to endeavor to find out what would be required to purchase South American products. We did not wish to release our gold reserves. We endeavored to compensate by shipments of other supplies. We had oil, and similar products of that kind.

The economic situation leads me to suggest that we almost need a strategy board in any plans for preparedness. It should consider men who are free-lances and who have experience in international trade. In order to successfully barter for those commodities that we require from abroad, we must have an intimate knowledge of the strategic requirements of the country where these commodities are found. These free lances would be able to go into the world market with the authority to bring the other fellow to terms. ✓

Sweden enjoyed a unique situation during the World War. While the belligerent countries were endeavoring to conserve their gold reserves, Sweden, a neutral, experienced the difficulty of accumulating too much gold.

Professor Gustav Cassel, internationally known Swedish economist, was called into the service of the Government to solve the problem. He recommended an embargo be placed on the importation of gold by the Swedish Government in payment for goods. Professor Cassel's recommendation was put into effect, only to have the United States break it down by establishing gold reserves in the Swedish financial institutions and checking against these reserves for payment of goods.

General Von Saunders of the German Army had been in charge of the reorganization of the Turkish Army for five years prior to the outbreak of the Balkan war. The Turkish Army was equipped with German artillery and the personnel trained by German artillery officers. Germany was astonished to learn that during the war the Bulgarian artillery (French equipment) outranged German artillery of like caliber. Germany had intimate knowledge of the preparedness of all other nations, and in order to correct this discrepancy levied a 5% tax on all capital of the country to recover her artillery.

France was alarmed by the action of Germany and requested the Government to increase French artillery to offset the German program. This measure was defeated in the Chamber of Deputies and France was unable to do anything until after the outbreak of the World War. The French firms of Schneider and Crussot had, however, gone ahead at their own expense, and manufactured on fictitious foreign orders certain heavy Ordnance which was turned over to the French government at the outbreak of the World War. It was solely due to the patriotic efforts of these firms that France had any modern heavy artillery.

Carry yourself forward fifteen to thirty years and face the situation the world faced in the European War. Lack of actual war time experience had introduced an absolute obsolescence of every instrument of war used previously, leaving only a paper program to show how effective a weapon would actually be. The German was best prepared, as they had seen the Bulgarians equipped with French artillery tear the Turks to pieces but a short time before. The Turks were using German 77 field pieces. So the Germans had just been equipped with heavy field artillery at the beginning of the war.

The Vickers Co., Ltd., of England, had also recognized the need for heavy artillery and had designed a 9.2" howitzer and submitted it to the British War Ministry for

approval. The latter considered such a field piece a joke and retained their old equipment, allowing the Vicker's howitzer to go to a museum for exhibition purposes.

The beginning of the war found the German artillery outranging the British guns, placing the British at a very great disadvantage. A conference was held in France to discuss the artillery problem. Lloyd George attended the conference and noticed that throughout the discussion reference was made to a young major who apparently had very decided ideas on the subject. After the conference he summoned the young major and questioned him regarding his views on the military program. The officer disagreed with the views of his superiors and the military program in general, favoring the use of heavy artillery. Lloyd George was convinced and returned to England, went before Parliament, secured an appropriation of 500 million dollars for the production of heavy field artillery, without going to the War Ministry.

A short time afterward Lord Kitchner came to Lloyd George with the military program of requirements for heavy field artillery. Lloyd George promptly doubled these requirements, and continued with his former production schedule.

Next came the British retreat from Mons, where forty percent of their artillery was lost. Lord Kitchner appealed to Lloyd George for a relief from this catastrophe and was promptly informed that there was no catastrophe, that the army requirements for artillery had been doubled and there was immediate replacement for all the artillery lost at Mons.

I was connected with the Morgan interests as a technical advisor when a cablegram came in requesting the dimensions and capacity of the ferry boats to transport loaded freight cars. England did not have ~~ferry~~ boats similar to ours and it was this conclusion that a great deal of time and labor could be saved by loading the loaded car on a ferry and sending it across the channel instead of unloading it at the dock onto a channel boat, unloading it from the boat onto a freight car in France. Thus large orders were placed in this country for these ferries and a great number were fabricated in England. This made it possible a little later to ship heavy artillery without transferring it at the docks.

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Nations did not make provision to ship materials in that way but continued in the same slow way. It was not America alone who went to sleep. We had no ambitions to keep a stated amount in this country. Excuses are not a sufficient alibi. It would seem regrettable in view of the development of light armor plate, which was perfectly developed before the war, that in the first development of trench warfare there should not have been some effort made to develop a movable fort. Trench warfare since the heavy artillery arrived developed field tactics. Trench warfare came unexpectedly, became magnified.

Newspaper correspondents were forbidden at the front in the early part of the war. It was decided to delegate a staff officer to write up details. General Swinton wrote articles of battles that the world had never seen the like before. Vivid descriptions were given without disclosing any military secrets.

At one of the British Staff meetings a young British officer told of seeing a farmer in Holland using a tractor in his muddy fields. He was at once detailed to go to Holland and to discover the make and all details of this machine. On his return he reported that as near as he could decipher the name, it appeared to him that the Holt Manufacturing Co., Peoria, Ill., was the maker of the machine. A dispatch was sent to South Africa to ascertain if there was such a manufacturer in Africa. After a negative reply was received from that source, the same query was sent to this country. On being informed that the Holt Manufacturing Company at Peoria, Ill., was a reputable concern that manufactured Caterpillar Tractors, negotiations were entered into for a quantity of their machines.

The next question that entered into the negotiations was absolute secrecy. A small manufacturing concern in the southern part of England was found which had been making a certain kind of steel and plate tank for a firm in the Baker oil fields in Russia. This plant undertook the fabrication of the parts of this new machine and they continued the practice of numbering the different pieces with the Russian letters and numerals as they had been accustomed to under their old contracts. It was here that the first tanks were built.

TNT, or trinitroroluene, is used to fill high explosive shells. It is made by the nitration of toluol. Toluol is obtained from coke oven gas. Prior to 1914, toluol was usually not removed from coke oven gas. Prior to our entry into the war, however, benzol and toluol scrubbing plants had been installed in practically all by-product coke plants in the United States. The country, therefore, had a very fair capacity for recovering toluol. It later developed however that this toluol capacity was entirely inadequate to meet the requirements and that in order to increase the available toluol, so-called toluol stripping plants were installed to remove the toluol from illuminating gas in all large cities.

Benzol and toluol constitute the so-called "illuminants" of illuminating gas and their removal reduced the candle power of the gas so materially that it was then unsuitable for burning in fantail burners. It became necessary, therefore, to greatly increase the use of gas mantles.

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The essential/gredient of gas mantles is thorium oxide. This material is obtained from the monazite sands. Normally, all of our monazite sand is imported from India and Brazil, although there are known deposits in North and South Carolina. During the war it was necessary for this material to be obtained from Brazil.

Some time after our country entered the war, the Brazilian Government decided to take such action as would prevent the exportation to the United States of monazite sands from the American concession. This difficulty was overcome in a rather extraordinary manner. The United States Government, represented by the War Industries Board, made a contract with the American Concession there to purchase interest in same. Our Government then notified the Brazilian Government that it had become a owner of this concession and that it would not consent to any action by Brazil that would interfere with the mining and shipment of monazite sand.

Monazite sand contains, in addition to thorium oxide, zirconium, cerium and lanthanum oxides. Cerium is used for pyrophoric compound and is contained, for example, in cigar lighters. There was no market for zirconium oxide and experiments were made with a view of ascertaining whether or not zirconium could be used as a substitute for vanadium in armor plates.

As a further measure for meeting the shortage of toluol, the United States, following the example of her Allies, adopted amatol, a mixture of TNT and ammonium nitrate, as the charge for high explosive shells.

It was found that both TNT and amatol were difficult to detonate with mercury fulminate, and a large number of "duds" would result. This difficulty was overcome by using a so-called "booster" charge. There were two substances used for this booster charge; tetryl or "tetranitromethylaniline" and TNA, or "Tetranitroaniline".

The proper dimensions for booster casings were not known and delay in the production of boosters caused a corresponding delay in meeting the program for high explosive shells.

No matter how thoroughly you are prepared, nor how well you have planned, you will have the most unexpected situations arise and the total impossibility of meeting these situations with the existing form of American Government is equally manifest. Take, for instance, the case of power at Niagara Falls. Certain essential industries in the United States had a contract with a Canadian power company of Ontario to supply the power. The contract carried a fifty-day cancellation clause. Sir Adam Beck, Lieutenant-Governor of the Province, a man always seeking to strengthen his own political position, thought he saw an opportunity to advance himself by exercising this cancellation clause unless the dependent industries moved their factories to Ontario. The heads of these industrial concerns appealed to the War Industries Board for relief from this difficult situation. The matter was taken up with the State Department and they assured the War Industries Board that the contract was legal and if Canada wished to exercise the cancellation clause they could do nothing about the matter.

The War Industries Board took the matter into its own hands, and the Raw Materials Division notified the Governor General of Canada that the cancellation of the Niagara Falls contract would place such a load on our power resources that it would be necessary to place an immediate embargo on all coal going to Canada from the United States. This alarmed the Canadian Government, as it faced the problem of seeing its nationals freeze without American coal, and the Governor General promptly wired the War Industries Board that the Niagara power

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contract would remain in effect, and that a representative of the Canadian Government was leaving immediately for Washington for conference with regard to the matter.

This representative proved to be the Canadian Minister of Finance, Sir Henry Drayton. Soon after his arrival in Washington he requested me (Mr. Summers) to call upon him. The conference was something like this:

Sir Henry Drayton: Mr. Summers, who are the members of the Raw Materials Division of the War Industries Board?

Mr. Summers: Mr. Baruch and myself, Sir Henry.

Sir Henry Drayton: I have just talked to Mr. Baruch and, by elimination, would infer that you sent the telegram to the Governor General regarding the placing of an embargo on American coal going to Canada.

Mr. Summers: I did.

Sir Henry Drayton: Mr. Summers, Canada should present you a crown for ridding her of one of her worst political obstructionists.

Alcohol is an absolutely essential item in the manufacture of powder, no other solvent known will effectually answer the purpose. To secure an adequate supply it was necessary to import from Cuba large quantities of cane molasses containing a high percentage of sugar and without which an adequate supply of alcohol could not be obtained. An effort had been made to distil corn just to the point beyond which it could not be used for planting but results were not satisfactory and were forced to fall back upon Cuba as the only source of an adequate supply.

Just at this critical time the law making body of Cuba were on the point of passing a law whereby the Cuban government would confiscate and take over the sugar cane industry of that country. The bill, if passed, would have been approved beyond question. As a result of such legislation, interests in the United States would have lost large sums invested in Cuba, but the vital consequence would have been loss of the only otherwise available item

from which we could produce alcohol. Without alcohol our manufacture of powder would stop. The only solution possible was taken by Mr. Wilson who having been advised by the State Department that no other steps would be effective, sent a telegram to the President of Cuba in which he threatened a complete embargo against Cuba if the confiscation law became effective. As a result of Mr. Wilson's prompt action, our munitions program suffered no interruption.

The great allied offensive started in July 1918. Late one evening in August 1918, Mr. Lencheur, the French Minister of Armament and Fabrication for War, sent for me. He told me that the present offensive was planned to continue for months. When the drive started they had fifty million 75 m/m shells in reserve. At present only thirteen million remained, and the offensive had hardly started. The trouble was they did not have the steel. France had the facilities for manufacture; without the steel the offensive promising so much would have to stop. The only place that the steel could be obtained was in America.

I at once cabled the State of affairs to Mr. Brauch and he had Mr. Replogle, of the Steel Division, issue special priorities on steel, and give special instructions to the Lackawanna and Carnegie Steel Companies to, at once, that same day, start to turn out 75 m/m shell steel in as large quantities as possible. The effect was immediate. Within fourteen days American 75 m/m shell steel began arriving in France, and continued to arrive with steadily increasing flow. Not only were the French factories thereafter able to keep pace with consumption of shell greater than any know before in the World War, but they actually succeeded in six weeks in building the 75 m/m shell reserves up to nineteen million. M. Lencheur came to me and showed me the figures. Thus America was able to save the day, and the offensive which finally resulted in victory for the Allied Arms was enabled to continue.

When steel began to flow from America to France, the State Department questioned the authority for some of the action taken by the War Industries Board without coordinating with the State Department. Time is a limiting factor in war - therefore the War Industries Board needed an international lawyer as a dollar-a-year man. Investigation proved that Chandler Anderson, a New York lawyer, who had recently been connected with the State Department

and who was still considered as a foremost authority on international law by the State Department, was best qualified to meet the Board's requirements. Mr. Anderson was brought to Washington and assigned the duty of placing his O.K. and initials on all decisions of the War Industries Board regarding international policies, and the Raw Materials Division of the War Industries Board continued to function.