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APPRAISAL FEATURES OF THE CONTRACT FORMS

by

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APPRAISAL FEATURES OF THE CONTRACT FORMS

Industrial appraisals have become thoroughly interwoven into the pattern of our modern business life and for various reasons they have become essential to almost every manufacturing organization in the proper conduct of its business

In time of war the subject of appraisals will have an important place in some of our contract negotiations It is my opinion, however, that we need not be apprehensive over the problem of how to handle that phase of the negotiations As we review this morning some of the general principles and methods of industrial appraisal work, we will find that the problem is not particularly complicated or difficult to handle

Appraisals may be roughly divided into two classifications: utility appraisals and industrial appraisals Utility appraisals are generally made by, or for submission to, rate-making bodies This type of appraisal work is complicated, but it is highly improbable that we will be concerned with the appraisal of any utilities It is almost a certainty that our appraisal work will have to do with industrial equipment and industrial plants only

The methods used in making industrial appraisals for insurance purposes, taxing bodies, corporate and financial purposes, are the methods that we will have to recognize in dealing with the problem of appraisals in the event of a national emergency Some of our contracts have provisions that will require us to determine the sound value of certain industrial plants. Other provisions will require us to determine adequate rates of depreciation on industrial plants and equipment components

In the folder given you this morning, the blue sheet is a specimen of an ordinary field work sheet used in making an industrial appraisal The set-up on this sheet, i e , "Description and Location of Item", - "Unit Cost", - "Replacement Cost", - "Depreciation" and "Sound Value", is followed in preparing the office sheets, the final detailed appraisal, the summaries, and the final report

In making an industrial appraisal, the first step, of course, is to make an accurate inventory This inventory must be written so that it is comprehensive and self-explanatory That is not a difficult thing to do In inventorying machinery the name-plate, as a general rule, provides all of the

information necessary If the name-plate is missing, a brief nd adequate description can easily be given To inventory structures, the procedure is somewhat different Dimensions, areas, specifications, and quantities must be detailed, but that is common practice in preparing estimates for either construction or appraisal purposes

To estimate the replacement cost new is simple procedure It is true it must be done carefully and by competent men, but it is not a difficult procedure The preparation of replacement costs for an appraisal is no different from the preparation of an accurate engineering estimate to build a new structure or plant We start with the conception that the site is clear and that we are going to build on it The unit costs of the structure or equipment components are based on the costs prevailing as of the date of the appraisal To these unit costs are added the freight, cartage, labor of installation costs, and any other cost items that go into the replacement cost

It seems appropriate here to point out that the purpose of an appraisal is to determine the sound value of a given asset as of a specified date The formula for deriving sound value generally recognized by insurance companies, banks, taxing bodies, and others concerned with industrial appraisals is - "Sound value is the cost of replacement new, as of a given date, less a reasonable depreciation however caused" That formula or method of deriving sound values is used daily by insurance companies throughout the world and has been recognized by courts and taxing boards in innumerable cases

When the replacement costs new, as of a given date, have been estimated, the next step is to determine reasonable and adequate depreciations to be applied to these replacement costs, in order to derive the sound values The problem of assessing an adequate and reasonable amount of depreciation is unquestionably the most difficult phase of appraisal work It is difficult because it is wholly and entirely a matter of judgment of the appraiser It is a problem, however, that always has been, and always will be, inseparable from any appraisal

The genesis of the word "depreciation" is suggestive of its application It is derived from two Latin words, - "de" meaning "from", and "pretium" meaning "price" It is expressible only in terms of the prevailing medium of exchange, - in this country, dollars and cents It is commonly and widely misused as a synonym for deterioration In computing depreciation, two factors are taken into consideration, -

physical deterioration and obsolescence

Few words in our language have a cleaner, uncorrupted lineage than "depreciation", "deterioration" and "obsolescence" Deterioration comes from the Latin word "deteriorare", meaning to wear out Obsolescence comes from the Latin word "obsolescere", meaning to fall into disuse Depreciation, deterioration and obsolescence have probably been tangled up in more litigations and court arguments, and more false definitions have been given of them, than any other three words in our language

It was inevitable that such a subject as depreciation, hich is so fundamentally tied up with judgment, would be a fruitful source of litigation Business, however, after many years of wrangling, has come to accept what might be generally described as more or less recognized standards Keep in mind, however, that there is no final authority on depreciation, nor can anyone, or any group, justifiably speak ex-cathedra on the subject Because of the many variables involved in every appraisal, obviously even the Supreme Court could not set up depreciation rates which would be universally applicable However, as this problem arose in all kinds of transactions - banking, credits, insurance matters, purchases and sales, reorganizations, security issues, etc - it was inevitable that sooner or later some methods would have to be developed to solve the problem in each instance with as little delay as possible

In its last analysis depreciation is still a matter of judgment, but there is a vast amount of data available to help and guide us when we have a depreciation problem to solve For example, in 1930 the United States Treasury Department issued a bulletin - "Depreciation Studies" - a photostat copy of some of the pages of which, is incorporated in the folder which you have Unfortunately, it is out of print, or I would have supplied each of you with a copy

This bulletin is a very interesting and useful publication The Treasury Department sent questionnaires to a great many manufacturers and organizations, asking for opinions on the average useful life estimate of the different equipment and structural components listed in the bulletin The replies were all assembled and grouped according to industries such as: building, agriculture, fishing, chemicals, floor coverings, metal production, rolling mills, etc The arrangement of the data is simple and effective The types of equipment

are classified and the probable useful life of each item is estimated in years, and the depreciation rates are given in percentages

Many other organizations have done and are doing similar work Some years ago the Cost Accountants Association of the Paper Industry went through exactly the same procedure with the paper mills and prepared a report, arranged in the same manner as the Treasury Department's bulletin This was a very valuable effort, because the figures were based on the actual experiences and records of the paper mills

Technical literature and periodicals frequently carry interesting and useful information on the subject of depreciation Only recently a bulletin was published entitled "Depreciation in the Drop Forging Industry", by the Vice President of one of the leading manufacturers of forging hammers It has photographs of each type of hammer the company built in 1905, 1918, 1923, 1933 and 1935 Underneath the photographs are statements, such as - "Life of this model was 8 years", "Life of this model was 10 years", - etc The bulletin also incorporates interesting data on the obsolescence factors of the different types of hammers

As another example of depreciation data appearing in technical literature, "The Oil & Gas Journal", a leading periodical in the petroleum field, not long ago printed a report of an exhaustive depreciation study which covered various types of petroleum producing and refining equipment, based on the actual experiences and records of a great number of producing and refining companies

There are also a number of reputable organizations which periodically publish information on tax subjects, and naturally these organizations have given considerable attention to depreciation rates

While there is a wealth of such data and information available, it must be emphasized that these data are the compilations of the experiences and opinions of others and can only be used by the appraiser as a guide in forming his own judgment as to adequate and reasonable depreciation rates to be assessed in the specific appraisal at hand

Before a depreciation rate or amount can be intelligently assessed, obviously the appraiser must know the physical condition of the asset being appraised and the factors of obsolescence which affect it Checking the

physical condition is a relatively simple matter Determining how much, or to what extent, the depreciation assessment should be affected by obsolescence is, however, quite a different proposition Many experienced engineers are of the opinion that insofar as machinery and equipment components are concerned, generally speaking, obsolescence is far more destructive of value than physical deterioration, assuming, of course, normal maintenance As a rule, obsolescence does not affect the value of structures to the extent that it affects the value of machinery and equipment

In spite of the years of economic depression we have been going through, impressive advances have been made in both the design and efficiency of machinery and equipment Neither good business years nor bad business years seem to slow up these technical advances The time is not available to do more than sketchily discuss this vitally important phase of appraisal work, but to illustrate how recent technical developments are affecting the values of equipment, the designs of which, until recently, had been considered to be more or less standardized, I have selected two examples, - one a very small piece of equipment, and the other very large equipment

In the little envelope in the back of the folder which each of you have, you will find a magnifying glass and a card Under the transparent tape on the card there is a complete ball bearing, smaller in diameter than a pin-head The bearing consists of a housing, ball-race and balls

For many years instrument manufacturers have been using jewel bearings, generally made of sapphire, for certain duties Many years ago a scale of ten degrees of hardness for the minerals of the earth was adopted Each of the following minerals possesses the degree of hardness indicated by their numerical order in the scale 1 - talc, 2 - gypsum, 3 - calcite, 4 - fluorite, 5 - apatite, 6 - orthoclase, 7 - quartz, 8 - topaz, 9 - sapphire, 10 - diamond It will be observed that sapphire ranks ninth in hardness and is next to diamond Practically all of the jewel bearings used in this country are imported from Switzerland It is interesting to note that the rough sapphire from which these bearings are cut, comes principally from Montana and is sold in a traditional market at St Louis

Substantially, a jewel bearing is a small disc of sapphire with a cup drilled in the center.

The rapid technical developments in recent years in aviation and many other special fields quite naturally created new

instrument problems Jewel bearings are frequently subject to failure from vibration or shock and differences in coefficients of expansion of jewel bearings and the shaft systems can cause trouble in delicately adjusted instruments

About three years ago, a well-known Swiss instrument manufacturer undertook to produce a ball bearing which would be more serviceable and efficient than a jewel bearing for these special duties Late last summer these bearings were introduced to the American market and are being widely adopted, not only by instrument manufacturers, but in other fields such as electric razors, and special radio equipment Undoubtedly, in the near future, these small bearings will be extensively used in many places where jewel bearings are now used

Passing from one of the smallest pieces of equipment to some of the largest, we find great improvements in design and efficiency there also In New Jersey, an oil refining company owns a large storage tank farm and pumping plant The page of photographs in the folder which you have, shows a number of the tanks and the interior view of part of the pumping plant All of the structures and equipment were erected new between 1920 and 1926, and consist of ten 114 ft diameter by 40 ft high steel tanks, a number of smaller tanks, a boiler plant, a pumping station, a fire protection system, and numerous pipe lines

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One would think that a plant built as late as 1920, with additions as late as 1926, would be relatively current and little affected by obsolescence A recent appraisal of this property, made necessary by an abnormal increase in tax assessment, proved conclusively that obsolescence was a critically important factor in determining the sound value of the property

The tanks on this property are used for the storage of gasoline, kerosene, and other light volatile fractions The photographs show that the tanks have eight rings each and are lap riveted The appraisal studies disclosed that the roofs were made of 5 47 lb steel, and the bottoms of 8 3 lb steel The cone roofs have a pitch of one and one-half inches in twelve inches, and all of them have outside curb angles on the top ring

These tanks were built according to the practices and designs that were current and accepted in 1920, but since that time, many changes and improvements in the design and specifications of tanks have been made Not long after these tanks were built, the American Petroleum Institute adopted standards

which required roof plates 40% heavier, bottom plates 25% heavier, a plate tensile strength 20% stronger, a lesser number of rings, and a butt riveted construction for the two lower rings instead of a lap riveted construction

A few years ago, the first all-welded storage tank of these dimensions made its appearance In a short time, many others were built, and it is safe to say that practically 75% of the oil storage tanks being built now are of welded construction. There are some locations where welding cannot be used because of fire and explosion hazards, and there are still some purchasers who insist on riveted construction There is hardly a doubt, however that the welded tank will in a very short time make the riveted tank entirely obsolete

Welded tanks of this capacity not only cost less than riveted tanks, but are much more efficient in respect to maintenance costs and leakage and evaporation losses

The riveted tanks shown in the photographs are leaking badly despite continuous efforts to keep the rivet seams caulked The bottom plates being of such thin material, the tanks will undoubtedly have to have new bottoms shortly Many of the roof plates have holes rusted through them and will require replacement in the near future.

Old style tanks of this size have a vapor capacity, in the cone roof, of approximately 24,000 cubic feet The modern "flat" type welded roof has a vapor capacity of approximately 8,000 cubic feet This is an important factor in "breathing" and "filling" losses If these obsolete, old style tanks are replaced with modern welded tanks, equipped with floating roofs, balloon roofs, independent balloon or vapor collecting systems, practically all of the leakage, pumping and breathing losses would be eliminated

The appraisal of this property also disclosed numerous other obsolete features, such as the old style "wet" Foamite fire protection system, with its large storage tanks of solutions and special stand-by pumps All of the oil pumps on the property are steam driven and a cost study disclosed that electrical operation of the pumping equipment would save approximately $2,000 per month

As a result of the studies and the appraisal, a report was submitted to the management showing that a saving of approximately $150,000 a year would be effected if this obsolete equipment were scrapped and replaced with modern equipment

Data on obsolescence of machinery and equipment is fortunately easy to obtain Technical periodicals and literature are full of it and machinery manufacturers are willing and anxious to supply information of that character regarding their products

Someone aptly defines depreciation thusly, - "In its broadest sense, depreciation comprehends all losses arising from physical and functional deterioration"

With his inventory made, his replacement costs computed, and his depreciations determined, the appraiser then only has to apply the depreciations to the replacement costs to derive the sound values.

Making an industrial appraisal is not a complicated procedure, and we will not require an army of appraisers in time of war to appraise industrial properties We are going to have the appraisal problem in the adjusted compensation contract, in the evaluated fee contract, and perhaps in other places We cannot side-step it and it is to the credit of the officers who have been working on the standard forms of contracts, that they recognized it long ago and have been making preparations to take care of it

It has been my privilege to observe some of the work done by the officers on the Contract Board Every angle, legal and technical, of these contracts has been thoroughly and expertly explored The work and accomplishments of these officers would be a credit to any organization - in or out of the service.

The incorporation of an arbitration clause in the contracts was very wise Such a clause is a statutory provision in practically all of the fire insurance contracts in this country Business and industry therefore are accustomed to it Unlike the conventional arbitration clause, it is not final and binding in the Government contracts, - but that is not important It is valuable as a "vent" or a "relief valve" for contractors who may feel they have a grievance and I am convinced that many differences of opinion, which would otherwise result in ill feeling or law suits, will be reconciled by this arbitration procedure

Another wise provision of the Government contracts stipulates that the sound values to be determined shall be computed as of the date of the signing of the contract This will discourage certain types of contractors from carrying an appeal all the way through the Board of Review to the head of

the department with the hope of gaining by the delay

Regulations and methods for handling appraisal problems in time of war probably cannot be decided upon just yet I am definitely of the opinion, however, that it would be unwise for the Government to adopt a policy of making appraisals with Government personnel The better policy, I believe, would be to require the Contractor to submit to the Government an appraisal made by a competent and approved appraisal organization The Government could then approve, disapprove or adjust the appraisal. Under this plan the Government would set up one or more boards of commissioned personnel competent to pass judgment on the adequacy or accuracy of the appraisals submitted by the Contractors. In the event a Contractor and the Government disagree on the adequacy or accuracy, in whole or in part, of an appraisal, the differences of opinion would be submitted to a Board of Arbitration as provided for in the contract, and the recommendations of that Board would go to the head of the department for his consideration

Information which is reasonably reliable indicates that there are approximately thirteen thousand plants in the United States with assets of over a million dollars, and that over ninety percent (90%) of these plants now have appraisals that are either current or could be brought up to date in a very reasonably short period It is believed that approximately half the plants in the United States with $500,000 or more capital also have current appraisals or appraisals which could also be brought up to date in a relatively short time

It would serve no useful purpose to enumerate all of the reliable appraisal companies now in business in the United States, but there are a number, such as, the American Appraisal Co , the Lloyd-Thomas Co , the Manufacturers Appraisal Co , Coats & Burchard, Day & Zimmerman, and others

In addition to these commercial appraisal companies, there are many experienced and competent consulting engineering organizations who also make appraisals, such as, Ford, Bacon & Davis, Stone & Webster, Sanderson & Porter, and numerous others It is a customary practice for these engineering firms and appraisal companies to retain in their permanent files, copies of all of the appraisals they have made

The cost of making industrial appraisals by commercial appraisal companies is not very great It is safe to say that the average cost of making an appraisal of a plant with

a replacement cost of a million dollars is about two-tenths of one percent (2/10ths of 1%) of the appraised replacement cost Plants with replacement costs less than a million dollars cost slightly more to appraise, but the increase in cost is relatively slight and proportionate

With these figures in mind it must be obvious that it could be much cheaper to have the appraisals made by approved engineering and appraisal organizations than for the Government to go into the appraisal business It must also be remembered that these engineering and appraisal organizations are already in existence and could get the appraisals out much more quickly than the Government could get together, organize, and launch an appraisal organization

It is prudent, and our duty to study this appraisal problem from every angle, and prepare to handle it in the event of war It is my opinion, however, that it will not be difficult to handle fairly and expeditiously, to the best interests of both the Government and the Contractors.

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Colonel Jordan The conference is open for questions now

Q Or the blue sheets, is your replacement cost historical or based on a current basis?

A All replacement costs are computed as of the date of appraisal, not the historical costs, but the cost of replacing with like kind and quality as of that date

Major McPike Colonel McCrossin, the replacement cost, you say, as of the date --

A As of the date of the appraisal, yes

Major McPike. Suppose that a man had a machine which initially cost him $10,000 and at the date of the appraisal it could be purchased new for $1,000 Would that be regarded as an equitable appraisal?

A Yes, sir

Major McPike As of the date of the appraisal?

A Yes, sir, regardless of the original cost If we undertook to assemble the original costs of a property we would be merely compiling a set of figures that were applicable to some day in the past, some remote day, and would not take into consideration current conditions If you or I were sent by an organization, a bank, a financial institution, or a Government organization to appraise a piece of property we would value the property as of that specific date Appraisals are made as of the date of the evaluation and all replacement costs are computed on the same basis Is that clear?

Major McPike Yes, sir Now as regards your depreciation, do you think a distinction should be made in depreciation for purposes of tax accounting between depreciation for purposes of selling, say, estimating a fair profit As I understand it, you made the assertion that these records are on hand of the evaluation, they have been checked for tax purposes Is that correct?

A No, sir

Major McPike In the Bureau of Internal Revenue, for instance?

A The Bureau of Internal Revenue's depreciation studies in 1930 were undoubtedly inspired by a desire to get as much accurate information as possible No doubt considerable confusion existed as to what were appropriate and reasonable rates of depreciation Some concerns would demand a 20% per annum depreciation on their machinery, when another concern using the same machinery in the same duty would use a depreciation rate of 10% per annum. Many taxpayers were trying to get too much depreciation, others were not getting enough

The purpose of that study and other similar studies was to try to ascertain from the taxpayers and from members of various organizations what their experience had been as to the actual useful lives of the different components and different units I do not believe that there is any basis for a distinction between depreciation used for tax purposes or any other purpose It should be computed intelligently and honestly

Major McPike In other words, the Government in some instances could go into a plant and practically get the information, knowing if the rate of depreciation had added up enough to, you might say, write it off at $1 00, in another instance it might cost $20,000 But the rate of depreciation

had gone out and the time had elapsed, and then the Government would be getting it at a value which would be very much lower than would be the actual cost. Isn't that perfectly possible?

A Book values are almost always deceptive and unreliable Book value accounts are generally arranged by groups of assets, such as, "Buildings" - "Machinery" - "Rolling Stock" - etc , without detailed separation into component units It is also a customary practice of the accountants to deduct from these groups of assets a certain arbitrary percentage to represent an annual rate of depreciation Obviously the arithmetical results of this procedure could not give correct sound values We are going to have to be careful of that situation in determining the depreciation allowances in plants, for example, where the upper floors of a building might contain complicated, fragile and expensive electrical or laboratory equipment, and the ground floor equipped with crude, inexpensive long-life blacksmithshop equipment

Major McPike In the last analysis, though, who is going to determine this? Now, as I understand it, you proposed that the Government would not go into the appraisal business, that is, it will be between an appraiser and the business man in each individual case Is that correct?

A That's right

Major McPike In other words, we are going to leave it to industry and the appraiser to fix the sound value --

A It would be better to say - to submit to us, for approval, a sound value

Major McPike But as far as the Government is concerned it is going to be a matter of form as to the approval of this It will not possess the ability or the information or the knowledge to go into these figures

A That is not quite correct Let us suspend our discussion on that for a moment and see how a somewhat similar situation would be handled in the business world Let us assume an industrial plant insured for a million dollars is destroyed by fire The owners of the plant would submit a claim to the insurance company, stating that the sound value of the plant was a million dollars. The insurance company is primarily in the insurance business and not the engineering business It is true they have a department which they call their "Engineering Department", but it has to do substantially

with fire protection, inspections, etc If the owners of the destroyed plant submit an appraisal made by competent appraisers as of the date of the fire, the insurance company would have competent and experienced engineers or loss men check the appraisal, or as is most frequently the case, they would employ competent experts to represent them in an effort to arrive at an agreed sound value of the destroyed plant If the insurance company and the owners of the plant could not agree, the arbitration clause in the policy would be invoked and both sides would be bound by the award of the Board of Arbitration

In my opinion, that, substantially, is the procedure we should follow

In the event of a national emergency we could not expect to find in the Government service, an adequate personnel experienced in valuation matters While there are no doubt a number of officers in the regular establishment and in the Reserve experienced enough to form the nucleus of an organization, we will undoubtedly have to go out of the Service and secure men of integrity and ability to pass on appraisals which will be submitted, by the Contractor, to the Government These men, of course, should be commissioned

Major McPike In other words, I suppose it depends on the integrity and the ability of the individual person?

A That's right It would

Major McPike I don't want to monopolize this, but I have one more question

A Certainly That is what I am here for.

Major McPike What rate do you think industry should get on the sound value of their facility? I mean, do you have in your mind what the rate should be, 8% or 15%?

A As a rental?

Major McPike: Yes You see, the Government gives the contractor a compensation based upon a rate upon the sound value of their facilities used for the purpose of the contract Now what rate do you think would be equitable and fair?

A That is a difficult question to answer without more details A definite determination will probably have to be made in each individual case I don't think we have studied the situation enough yet to suggest any general or universal rate You will recall that some of the contracts have provisions covering that part of a plant used in the production of the required articles or necessarily rendered idle by the production of the required articles I can foresee that many different kinds of situations can arise from these contracts For example, a portion of a Contractor's plant may consist of equipment and facilities for the use of storage of crude materials and only used at certain seasons Another portion of his plant might be rendered idle by the operation of the contract, but this portion of the plant might consist of expensive equipment with a short economic useful life It would appear at the moment, that it would be unfair to apply identical rates to both classes of equipment

Major McPike I am glad you admit that that is a tough question, but I want to ask your opinion of a contract which in advance would presume to fix that rate. Do you think such a thing would be practicable if the contract carried 6%?

A I don't believe that these problems when they arise and become tangible problems will offer nearly as much difficulty in consideration as they do now in their theoretical state I don't believe we are going to have anywhere near the number we anticipate now, but we must be prepared We have that problem of depreciation rates and we have the problem of evaluations to work out My conception of how to work them out is to provide for an adequate personnel familiar with what is going on in business, to decide these questions as they arise

Q Suppose we take over a steel plant for forging projectiles and make the settlement award and we take the Government table here at page nineteen here the drop forge hammer is given a probability of fifteen years The manufacturer comes, as you pointed out, and gives the life at seven to eight years As Government officials we have got to stick by this, and we soak the Government, whereas, if we take the manufacturer we could probably save 50%

A I am glad you brought that up If the Government Printing Office can get the bulletins I have ordered, I intend to send to Colonel Jordan, for distribution to each of you, a complete copy of the bulletin you mention. You will find in the foreword a statement reading substantially

this way, - The use of the rates of depreciation based on the probable useful life of the various assets shown in this bulletin is not prescribed in any particular case and should not be used arbitrarily They are set forth as a guide or starting point from which correct rates may be determined from experiences with the property under consideration or other pertinent evidence

Depreciation studies from other sources generally contain expressions of the same character Drop hammers have different duties. I remember one group of drop hammers that had been used in making gear shift levers for about twelve years. At the end of that time it was decided to dispose of them and they only brought their scrap value in the market Other drop hammers that had been in use in different duties for five years were sold for approximately one-half the price of new hammers.

The assessment of a depreciation rate is a matter of the judgment of the appraiser and his judgment, of necessity, is influenced by his knowledge and experience. It is only natural that buyer and seller positions, to a certain extent, reflect high and low attitudes on depreciation.

Q You spoke of replacement cost as on a clear site Of course, if you tried to do that with a utility company - there is not another piece of land probably that they could start clear on, and it seems that would be an unfair evaluation

A Obviously I did not make that point clear In making an appraisal of a property as of a given date, you start with the conception that the site is clear and that you are going to build a plant on it The replacement cost estimate is made up the same way that an engineering estimate would be made if the site actually were clear and a new structure actually was going to be built on it For example, let us assume we are appraising a rectangular concrete and brick building. We would first compute the amount of excavation that would have to be made, the number of yards of material to be excavated, and the cost of doing that work per yard as of the date of the appraisal We would then compute the number of cubic yards of concrete foundations and the unit cost of the concrete We would figure the costs of making the sewer, water, and other service connections. We would figure the cost of back-fill after the foundations were put in All of the other components of the structure would be figured in detail as of the date of the appraisal and we would include the cost of rough and finished grading, pavements, fences, painting, and finally

cleaning up the site In other words, we would put in our replacement-cost-new column, every item of cost entering into the construction of the building, based on prices and costs prevailing as of the date of the appraisal

Q I don't know if I understood you correctly but I got the impression you said that for any of these contracts that involve a rental of some kind that the valuation should be the replacement cost at the date of the signing of the contract

A Perhaps I did not make myself clear in that answer What I intended to say was this Under the suggested arrangement for handling these appraisal problems, the Contractor will submit to a board of officers an appraisal by an approved appraisal organization If the Board cannot agree with the Contractor on the appraised sound values he presents, the Contractor can appeal to a Board of Arbitration and that Board of Arbitrators' findings will go to the head of the department.

It might appear to some that such a method would enable the Contractor to get an increase in his sound values because there would be a delay before a final decision was reached and the Contractor would benefit by rising prices and rising costs That possibility, however, is eliminated by the wise provisions the Contract Board has put in the contracts, stipulating that the sound values shall be ascertained and determined as of the date of the signing of the contract and not the date of final decision in any appealed cases

Q I was trying to relate that with what you had said about the number of appraisals that were already in existence. Now a firm may have an appraisal - you say 90% of the largest companies have appraisals - but those may have been made a number of years ago If you go to war today it looks to me like you are going to have to go all through that appraisal and make out a complete new schedule of replacement costs. Wouldn't that be true?

A That is an intelligent question. The recognized appraisal organizations all use substantially the same arrangement of their appraisal reports The inventories are detailed and arranged in an orderly manner and then they are grouped by classifications and by buildings. Experience has shown the best arrangement of these reports to permit of deductions for retirements, or additions for replacements or extensions All of the appraisal companies offer a service

to their clients which comprehends periodical inspections of the property and adjustment of the appraisal up or down to take care of retirements or additions, and price changes Unless an appraisal is very old, bringing it up to date really isn't a very big job

Q In connection with that, is this keeping up to date merely the addition to the inventory or the subtraction from the inventory and does that go all through the list? Does that alter the replacement cost if that has been necessary? I can see that a lot of time might be saved by this periodic check-up, additions and subtractions to the inventory, but if the replacement isn't up to date you still have a tremendous amount of work to arrive at a fair valuation

A To bring an appraisal up to date the additions to, or retirements from, the inventory must of course be made, and in addition to that if there are any changes in unit costs, the replacement cost must be adjusted Accrued depreciation must also be assessed and new sound values derived That sounds like a long drawn out job, but it really isn't as difficult as it sounds The rapidity with which this work is done is always surprising to those not familiar with it, but that it is quickly and economically done is attested by the figures I gave you of the cost of making appraisals by commercial appraisal companies Unless the work could be done rapidly by experienced men, the cost of making an appraisal of a million dollar plant would be many times the approximate cost figure I gave you of two-tenths of one percent (2/10ths of 1%)

As an illustration of how fast this work is done, let me cite a recent fire loss involving a very large paper mill. The damaged equipment had a sound value of approximately $750,000 The fire occurred about the 1st of November The owner of the plant had an appraisal that was four years old An engineer was sent to the plant on Sunday and arrived there Monday morning Working with the owners' engineer and plant records, they had all the necessary changes made in the appraisal by Thursday night In order to bring the appraisal up to date he had to make a number of additions and retirements in the inventory, change a number of unit costs, and bring up the accrued depreciation

Q I would like to ask one question In this adjusted compensation contract, as you know, the estimated cost includes rehabilitation Now are you going to figure the cost of restoring the plant to its original condition as of

the value at the time the contract is signed or at the time that the contract ends?

A That's an intelligent and important question and the point you raise has been the subject of some discussion. The contract provides for a determination at the date of the signing of the contract of a sum of money to be paid the Contractor to restore his plant to its original condition after the termination of the contract It would seem fair and reasonable that provision should be made for increasing or decreasing the amount of this sum if conditions at the termination of the contract warrant such action

Q. Do you think there will be some means possible by which the services of organizations as you represent be made available to district representatives in surveying facilities?

A You mean that the services of these various organizations we are talking about be used now or made available to the present district executives for the present war surveys?

Q Yes, sir.

A I am sorry I cannot answer that question directly, as I have never discussed it with any of these engineering or appraisal organizations I feel reasonably sure that a good many of them would be glad to cooperate with the Ordnance District Executives to a certain extent, but in time of peace it is not likely that they would want to devote very much time unless they were paid for it

Q I had in mind whether that information was confidential or not?

A Yes, all information of this kind is held confidential by the appraisal and engineering organizations and would not be given out in time of peace without authorization from the firm for whom the appraisal was made

Q I don't want to dwell unduly on this replacement cost, but since it is the basis I think proper conception is important Is there any cognizance taken of the business cycle of the price level at the time the appraisal is made?

A The replacement costs are ascertained as of the particular and specified date of the appraisal. Past or anticipated price trends cannot be considered - only the prices prevailing for the equipment, structure and labor

components prevailing on the date of the appraisal It is unquestionably true that price changes and fluctuations may upset the appraisal figures even a short time after the appraisal is finished. However, that is the exception rather than the rule If a precipitate rise or decline in prices occurred after the appraisal is made, then there is nothing to do but to adjust the figures to agree with conditions.

Q. Is it possible for a corporation to build up their assets that way by getting an appraisal at the time the price level is high?

A That is possible.

Q They can inflate their fixed assets?

A Perhaps it would be better to say that having an appraisal made at the time of a high price level would show greater value of the fixed assets than would be shown by an appraisal at the time of a lower price level. I don't think the legitimacy of the appraisal would be questioned because all other properties appraised at the same time would be valued on the same basis

Q Do the bankers or the Securities and Exchange Commission take any cognizance of when the appraisal was made as a basis for issues or for bank credit or anything?

A Probably the only specific answer that can be made is that it is unlikely that financial institutions would give much credence to any appraisal unless it was recent and computed on current prices

Colonel Jordan Colonel Harris, would you care to say anything?

Colonel Harris: I would like to say one or two things Going back to fixed price contracts, I would like to emphasize again that the larger proportion of war time procurement will be on fixed price contracts. I maintain that there will be some cases where they cannot avoid some form of cost-plus contract The evaluated fee contract that Major McCrossin has been talking about is the simplest form of cost contract we have yet had approved as it has fewer evaluations than the adjustment compensation contracts.

We have been in touch with Major McCrossin for the last two or three years and he has been of tremendous value

to the Planning Branch He has lent freely of his time and he has consulted groups of associates and they have given freely of their time to analyze our contract forms I must say that as a result of our association with him and others in that field we feel now that appraisals are not quite the bugaboo we originally thought they were We want to eliminate in war procurement as far as we can the cost-plus form of contract, but in some cases we cannot do it I take this opportunity of expressing our appreciation of Major McCrossin because he has been of real value to the Planning Branch

Mr McCrossin: It has been one of the most pleasant associations of my life

Colonel Rutherford: There is one thought I would like to mention. I was glad Major McCrossin brought it out in emphasizing that the more nearly our methods approach those used by industry the better prepared we are going to be. We are of course limited by statute and regulation and that not as to certain things we can do and certain things we cannot do, but within limits we have a great deal of leeway We can possibly change some of the fixed limitations we have had heretofore, for example, as Major McCrossin brought out, putting into our contracts that idea of arbitration That is the way business men settle their difficulties It is going to save us a lot of difficulty and it is going to give us a much better stand-in with business men when we do things in the way that they are accustomed Naturally it is going to avoid considerable upsetting of economic conditions if we look forward to adjusting ourselves as much as we can within our limitations to the methods used by industry itself

Colonel Jordan: Major McCrossin, I want to tell you how much we appreciate your coming here and giving us practically this entire morning, sir The College is under a debt of gratitude to you and we want to express our sincere thanks.

McCROSSIN & CO.
Engineers
120 Wall Street
New York, N. Y.

-h o	Qty	Building # Floor Dept. Sheet #	Unit Cost		Replc't. Cost		Dpn	Sound Value	
		SUBJECT							

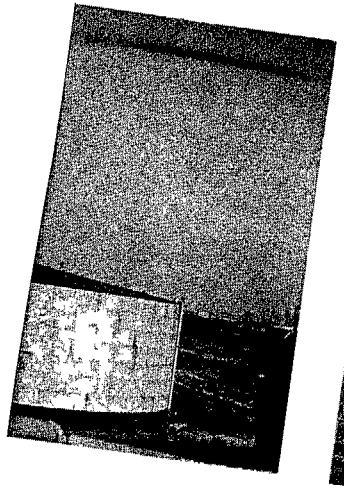
IRON AND STEEL FOUNDRIES, ROLLING MILLS, COKING PLANTS, ETC—Continued

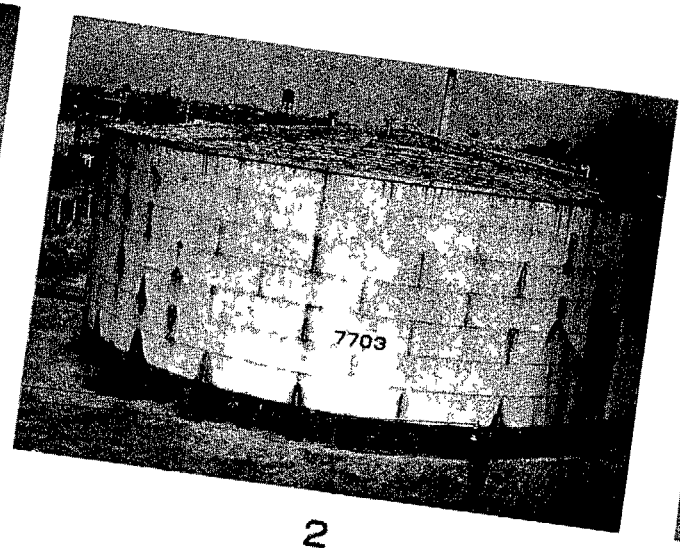
	Probable useful life	Depreciation rate
	Years	*Per cent*
Hammers		
Drop	15	6⅔
Pneumatic	5	20
Steam	15	6⅔
Hoists		
Air, chain and electric (small units)	13	7½
Skip, steam or electric	20	5
Holders		
Electrode	10	10
Gas	20	5
Hoods steel over furnaces	5	20
Intensifiers, hydraulic	22	4½
Jolt machines	10	10
Laboratory equipment, chemical and metallurgical	13	7½
Ladles		
Hot metal	12	8⅓
Steel	11	9
Lathes		
Engine	16	6¼
Roll	20	5
Lifting devices, door	15	6⅔
Linings		
Furnace	3	33⅓
Stove	8	12½
Loaders rail	15	6⅔
Lockers		
Steel	20	5
Wood	12½	8
Locomotives, steam or electric, all gauges	15	6⅔
Magnets lifting	15	6⅔
Mains gas collecting	20	5
Manipulators, hydraulic, electric	17	6
Milling machines	15	6⅔
Mill machinery		
Billet	20	5
Blooming	20	5
Merchant bar	20	5
Plate	20	5
Puddle	20	5
Rail	20	5
Rod and wire	20	5
Seamless tube	15	6⅔
Sheet	20	5
Strip	20	5
Structural	20	5
Tube lap weld butt weld	20	5
Mills		
Ball	13	7½
Boring	15	6⅔
Sand	10	10
Mixers		
Concrete	10	10
Hot metal	20	5
Lime	15	6⅔
For ladle lining materials	10	10
Mold wash	13	7½
Sand	10	10
Molding machines	12	8⅓
Molds ingot	5	20
Ore bridges	20	5
Ovens		
Buckstaves (structural steel)	12	8⅓
Coke	20	5
Ovens and stacks annealing core or mold drying	18	5½
Oven trucks, trays and racks, core	18	5½
Pickling machines, steam, electric	17	6
Pickling tanks (cypress)	10	10
Pipe cutting and threading machines	18	5½
Pipe lines, hydraulic	22	4½
Pipes	*Years*	*Per cent*
Fuel	20	5
Gas	20	5
Valves and fittings, ascension	15	6⅔
Piping		
Air, gas, liquor, oil, steam, tar and water	20	5
Blast, Bessemer	25	4
Blast furnace gas	25	4
Hot and cold blast	25	4
Pits		
Casting (concrete and steel)	25	4
Soaking	18	5½
Planers	18	5½
Planers and jointers (wood)	20	5
Plates floor		
Cast iron	15	6⅔
Water cooled	10	10
Platforms		
Concrete	25	4
Wood	10	10
Platforms ladders, stairways, railings, foot bridges, etc. (structural steel)	18	5½
Pointers rotary, for wire	12	8⅓
Polishing machines for wire	15	6⅔
Posts looping merchant mills	15	6⅔
Presses		
Drill	18	5½
Hydraulic	20	5
Producers gas	15	6⅔
Punching machines	15	6⅔
Pushers and levelers, coke plant	20	5
Pushers for mill furnaces	17	6
Pusher tracks	25	4
Quenching equipment	20	5
Rammers pneumatic	10	10
Reclaiming equipment sand	10	10
Reels rod strip or wire	18	5½
Regulators electrode	12	8⅓
Reheaters gas	15	6⅔
Sand or shot blast equipment	10	10
Saturators, gas	15	6⅔
Saws cold and hot	17	6
Scale cars testing	20	5
Scales		
Automatic	10	10
Crane	10	10
Platform	20	5
For railroad cars, track	20	5
Screens bar coke	20	5
Scrubbers gas	15	6⅔
Shapers	18	5½
Shears		
Electric	15	6⅔
Hydraulic	20	5
Rotary	11	9
Steam	15	6⅔
Sintering plants	20	5
Slingers, sand	10	10
Slotters	18	5½
Spike machines	15	6⅔
Spooling machines wire	15	6⅔
Squeezers puddle mill	15	6⅔
Stampers, billet	12	8⅓
Standpipes		
Concrete	50	2
Steel	25	4
Wood	10	10
Stills ammonia	15	6⅔
Stokers furnace	17	6
Storage yard, concrete	30	3⅓
Straighteners wire	15	6⅔
Straightening machines roll type	18	5½
Stretching machines	15	6⅔

	Probable useful life	Depreciation rate
	Years	*Per cent*
Tanks dyeing or rinsing	15	6⅔
Tubs pickling	15	6⅔
Twisting machines	20	5
Ventilating equipment	20	5
Washing machines	15	6⅔

ING MILLS, COKING PLANTS ETC

Core machines	20	5
Couplings		
Flanged	20	5
Flexible	16	6¼
Muff	10	10
Crackers skull	22	4½
Cranes		
Electric traveling	17	6
Gantry	15	6⅔
Jib	15	6⅔
Locomotive	18	5½
Cupolas	20	5
Cutting and threading machines	15	6⅔
Cutting and welding equipment, oxy acetylene	10	10
Derricks scrap breaker	20	5
Doors		
Oven charging hole covers, etc	13	7½
Rolling (steel)	17	6
Drag offs and ons	18	5½
Drawing equipment cold	15	6⅔
Drawing frames, wire	17	6
Drills, electric and pneumatic, portable	5	20
Drop scrap	22	4½
Drop test machines	11	9
Dryers, sand	10	10
Drying equipment, ladle, gas or oil	15	6⅔
Drying machines, centrifugal	10	10
Dumpers car	20	5
Dust collectors	20	5
Elevators		
Bucket	20	5
Electric or steam	17	6
Hydraulic	18	5½
Exhausters, gas	17	6
Exhaust systems	11	9
Fence machines (wire)	10	10
Forges portable	10	10
Furnaces		
Annealing	18	5½
Annealing tunnel type	17	6
Blast	20	5
Continuous, heating	17	6
Electric, for melting	18	5½
Forge electric	17	6
Hardening, drawing, electric	18	5½
Open hearth	25	4
Puddling	17	6
Reheating	17	6
Welding	17	6
Furnace shells blast and electric (Same as furnace)		
Gasometers	15	6⅔
Gear drives, reduction (Same as machines operated)		
Grinders		
Stationary and swing frame	15	6⅔
Tool or saw	16	6¼
Guides		
Coke	8	12½
Roll	10	10
Guns mud	10	10





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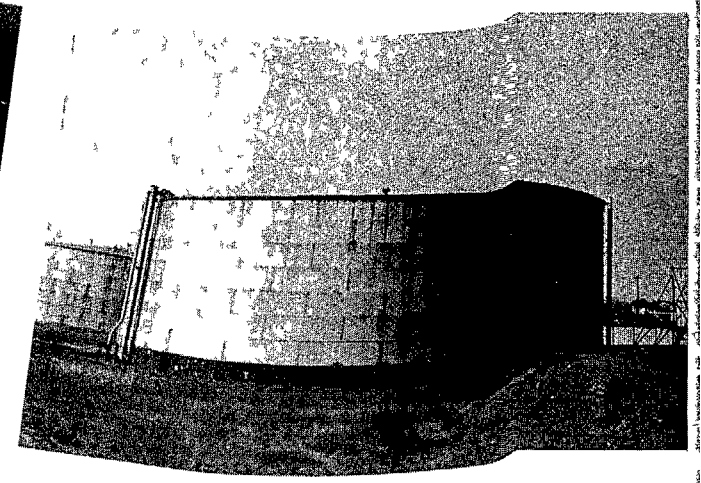

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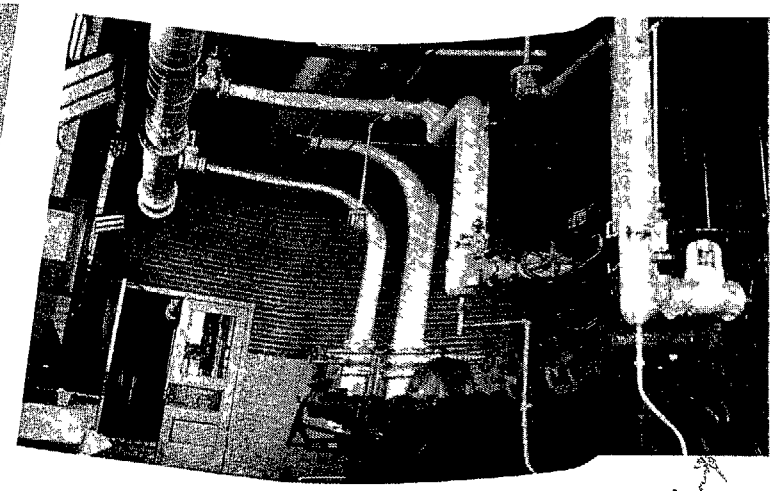

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