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## PRODUCTION PROBLEMS AFFECTING CONTRACTUAL RELATIONS

4 April 1949

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PRODUCTION PROBLEMS AFFECTING CONTRACTUAL RELATIONS

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GENERAL HOLMAN: Our lecture this morning deals with the responsibility of contracting officers and government representatives for preventing any delays in production. In any large manufacturing program there will be problems constantly arising which affect labor, materials, and inspection, as well as just plain administrative problems which must be solved. Decisions must be made at the plant or the district level. While the contract itself furnishes the basis for making these decisions, there is no substitute really for good sound business judgment on the part of the government representative who is charged with administering the contract.

Our speaker today has had a wealth of experience in government contracting. He has devoted many years of his life toward providing the Air Force with better airplanes. He has worked in the field of research and development, production engineering and also in procurement. During the war years he was Chief of the Procurement Division at Wright Field. We knew him last year as the Deputy Director of the Logistics Division of the Army General Staff. He is now the Deputy Commanding General for Operations of the Air Materiel Command at Wright Field.

It gives me great pleasure to welcome to this platform Major General Orval R. Cook, who will discuss "Production Problems Affecting Contractual Relations." General Cook.

GENERAL COOK: Thank you, General Holman. My talk will not be a lengthy one so you can look forward to not spending too much time in here listening to me.

There is nothing romantic about a production problem, although, in a business sense, its results may be spectacular. Production problems run the gamut from a simple tool or process difficulty to those that can result in complete ruination of the production enterprise, physically, financially, or socially.

Neither is there anything romantic or spectacular about a production contract, particularly the humdrum but useful variety with which we are familiar. The purpose of this introduction is to dispel any illusions that a light novel might be written around the subject of this lecture, or that it could be successfully employed as a vehicle for a light opera.

Before discussing production problems, it is fitting to review some of the fundamental elements of both production and contracts.

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Production generally may be reduced to five fundamental essentials. These are: (1) manpower, (2) machines, (3) materials, (4) management, and (5) money.

I will not discuss at this point any one of these essentials because I am certain that you are familiar with their meaning and uses. My purpose in mentioning these essentials is that difficulty with one or more of them can and does generate production problems. There are other causes of production problems, but there are very few which cannot be reduced in fundamental terms to one or more of the five essentials.

In general, the elements of the kind of contract with which we are most familiar are:

1. Its purpose.
2. A description of goods to be delivered--the specification.
3. A time and rate of delivery--the starting date and delivery schedule.
4. Place of delivery.
5. The consideration--and how, when, where, and to whom payment is to be made.
6. Penalties and/or incentives.
7. Method of change or amendment.
8. Special provisions.

The production contract is almost invariably either fixed price or cost-plus-a-fixed fee, but it is important to remember that there is a considerable difference in the administration of these types of contract. In the pure fixed-price type, the contractor assumes a reasonable risk which usually is compensated by higher profit. In the cost-plus-a-fixed-fee type, and fixed price with price redetermination, the Government assumes practically all the risk. This factor is mentioned at this time because the same production problem may affect contractual relations under one type of contract but not under another.

The subject of contract amendments and changes is as complex as the subject of production problems. Changes in contracts are made that in the strict sense of the word do not affect contractual relations, just as there are production problems that do not affect contractual relations. Changes in contracts that have been awarded as a result of competitive bidding is a special subject, and for reasons that are obvious or well

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known to you. It then can be said that not only may the type of contract influence the effect of a production problem on contractual relations, but the method of award may influence the effect as well.

What is a production problem? Broadly, it may be defined as a circumstance which adversely affects the ability of the producer to deliver his product within or at the time specified by the contract, or which conforms in all respects with the contract specification, or within the costs anticipated by the contract. The circumstances may be generated by the Government, by the contractor, or by influences over which neither has any control. Any circumstance which enables a contractor to exceed the requirements of his contract, obviously, need not be a production problem.

For purposes of illustration, I will start with a contractor who has a factory that is operating perfectly and producing on schedule, in strict accordance with the contract specification, and within costs anticipated by the contract. The stage now is set for production problems that will affect contractual relations, and which I will introduce to disturb the peaceful serenity of my victim.

In accordance with the terms of the contract, the Government furnishes certain property to be installed in the end item being delivered by the contractor. For its convenience, the Government decides to change the type of property being installed.

The new article of government-furnished property cannot be installed without physical change in the structure of the end item. The change requires engineering, new or additional materials, new tooling, fabrication of new installation parts, or purchase of new vendor-furnished parts, and training of employees. Cost is increased, and delivery is delayed. A contract change is required to fit the new conditions and is duly negotiated and executed.

My unsuspecting victim is successful in recovering his former tranquility, when a perfectionist in his own family, in the form of an engineer, thinks up a new wrinkle that will save costs in production, that will not in any way reduce the utility, durability, or function of the product, but does not improve the product. Introduction of the change will not affect the delivery schedule, but it will cause the product to deviate from the exact requirements of the contract specification. A request for the change is made by the contractor and is agreed to by the Government. A change order or contract amendment is negotiated which extends to the Government a reduction in price as consideration. The change order is duly executed, and production again smoothes out.

After several weeks of untroubled calm and peaceful production, the contractor is confronted with labor trouble. The union represented in the contractor's plant votes to strike and, after the legal cooling-off

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period, goes on strike. Federal mediation, conciliation, and arbitration all fail. The strike is protracted. Material orders must be canceled or suspended, and vendor-furnished items cannot be accepted. The plant is at a complete standstill except for maintenance and security. The circumstance is beyond control of either the Government or the contractor. After several weeks of negotiation, the contractor signs a new agreement with the labor union which, among other provisions, includes substantial increases in rates of pay.

Several production problems have been generated. Costs will be higher. Labor costs are increased as a result of the wage raises. Material costs are increased because of the necessity for reordering and rescheduling materials. During the strike a significant number of workmen obtained employment at other work, therefore, new and untrained people have to be recruited and trained for these vacancies. The contractor already is in default in delivery of his product, and a new delivery schedule must be established. Regardless of the type of contract under which the contractor is working, change orders or amendments must be negotiated, and the negotiation is as complex and involved as negotiation of the original contract. After all these troubles, this particular contractor completes his contract without further difficulty, but you may rest assured that during the remainder of the life of the contract, he is neither tranquil nor serene. The management figuratively sits on the edges of its respective chairs for a long time.

Having done considerable mischief to one contractor, I will transfer my diabolical attention to another who is suffering from a bad case of postwar complacency compounded with the ambition to be Mr. Big in his field. He has a comfortable backlog of sound government orders, but decides to take in addition a real flier in a highly speculative product. His investment in development, materials inventory and work in process rapidly increases, and his working capital decreases. He finally, but too late, concludes that his investment in unsold and unsalable inventory of the speculative product more than offsets his sales of the sound product; he is in a serious predicament. His suppliers are clamoring for payment and are withdrawing credit. His bankers consider him a bad business risk, and he has only enough cash to pay his employees for a few weeks. He figuratively is in the center of a maelstrom of his own making. Although the product which he is making for the Government is sound and is urgently needed by the Government, he cannot make deliveries on schedule. He appeals to the Government for relief. He is as much a risk to the Government as he is to his bankers. A solution finally is achieved by distributing the risk; the requisite contract changes are negotiated and executed; and the contractor resumes delivery to the Government, with the bankers and the Government breathing down his neck and stepping on his heels with every move that he makes. He finally emerges from his difficulties a sadder and, I hope, a wiser contractor.

An encyclopedia of production problems that will affect contractual relations would contain hundreds and perhaps thousands of case examples. The examples I have used are simply illustrative of the fact that any production problem that prevents the contractor from complying with the terms of the contract will affect, in general, contractual relations and will require some form of amendment of the contract.

Some causes of production problems are:

1. A requirement for the use of newly developed material, or a unique material which is difficult to obtain.
2. A change to a standard or more readily procurable material.
3. A change in detail design to improve utility, functioning, or durability of a component.
4. A change in detail design necessitated by fabrication difficulties.
5. Changes in design or fabrication required for safety in the use of the product.
6. Changes in installed government-furnished property.
7. Changes in rate of delivery--at request of either contractor or Government.
8. Change in total quantity on contract.
9. Labor problems.
10. Training of workmen.
11. Poor management.

In my opinion, this last is the most prolific cause of production problems, although there are many who will take issue with me on this point. My reasoning behind this statement is that labor troubles, financial difficulties, and problems in production techniques frequently can be traced back to errors in judgment or lack of alertness in recognizing a minor difficulty as a potential full-scale problem in time to dispose of it before it develops. The Government cannot be excluded from being either a principal or an accessory to poor management. As one party to a contract, it can manage its affairs so poorly as to impose needless production problems upon a contractor who, under more favorable circum-

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stances, would be generally successful in avoiding problems that would affect contractual relations.

Earlier in this talk, I mentioned that a production problem might be generated by the Government, by the contractor, or by other influence. A production problem generated by the contractor, and of a type which requires a change in contractual relations, must be carefully scrutinized. Some changes of this type can be avoided by careful negotiation of the original contract. A production problem generated by the Government, but at the suggestion or instigation of the contractor, must be even more carefully scrutinized. Change orders can be used as a vehicle for indirectly achieving over-all more favorable terms than were specified in the original contract.

Contractors generally do not attempt to use this stratagem for recoupment, but it has been employed. You may recall a verse from Kipling: "Who shall doubt 'the secret hid under Cheops' pyramid' was that the contractor did Cheops out of several millions?"

Production problems that affect contractual relations usually affect the cost element of the contract, and most frequently result in higher cost of the product called for in the contract. Avoidance of the problems must be sought, both by the contractor and by the Government. Failure to properly anticipate all possible requirements during negotiation or in advertising for bids results in problems that add to the cost. Changes of mind after execution of the contract add greatly to cost and usually delay delivery. If I have accomplished nothing else by this lecture, I hope that you have been impressed by the fact that a production problem that affects contractual relations may occasionally be welcomed by a contractor, but generally is bad news to both the contractor and the Government, and especially to the Government. Thank you, gentlemen.

QUESTION: You mentioned something about the Government being at fault in the negotiation of these contracts or dealing in contracts. Would you elaborate on this a little bit further to give us some examples?

GENERAL COOK: Unless the people who are negotiating the contract on behalf of the Government know exactly what they want at the time the contract is negotiated, and unless they are very careful to see that all of the requirements that are going to be placed upon the contractor are carefully spelled out in the contract during the negotiation, the Government frequently discovers that something was forgotten, or the contractor discovers that something was forgotten, and the forgotten element has to be taken care of in the form of an amendment. That is just ordinary good business as observed in intercourse between business organizations, whether the Government is involved or not. Does that satisfy you?

QUESTION: In one of your examples you mentioned the contractor who got into hot water and became a poor financial risk; you said that

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the Government assisted the banks in taking over that risk. Would you state how the Government could assist in taking over risks?

GENERAL COOK: Under certain contracts, progress payments and advance payments can be made. If you are not familiar with financing and financial operations, you will find that banks sometimes will jointly decide to make a loan to a contractor by dividing up his requirements for cash among several banking institutions. So in the illustrative case that I gave, I probably should have elaborated on that and said, not only did the contractor negotiate loans with several banks for smaller amounts with each one, but the Government also, in order to meet the banks, advanced certain sums of money to distribute the risk among several different places. That is a device that is used quite frequently where a commercial enterprise isn't too sound financially but has a sound product, or has a good backlog of sound orders and has just gotten itself into financial difficulties by bad management. Also, concurrent with taking on a distributed risk, generally there is a change in management. The fact is there almost always is a change in management.

QUESTION: There seems to be some difference of opinion about the advantages and disadvantages of a contingent contract. Could you tell us a little about that, please?

GENERAL COOK: What do you mean by a "contingent contract?"

QUESTION: For instance, in industrial planning, a contract is let to one manufacturer to produce a hundred articles at a certain date. Maybe M-day boosted it to a thousand per month. I understand that is a contingent contract. What are the pros and cons about that? Are they used by the Air Force?

GENERAL COOK: No, we don't use that type at this time to my knowledge. There may be one or two. But our general belief in connection with that preparatory type of contract is that all of the production planning and perhaps enough production to prove the tools--if the article is not immediately required--is the best way to prepare for further production. But the Air Force has so far found itself short of funds for very much of the preparation in the way of getting tools and proving the tooling, except for those items that we actually are purchasing and actually need now. I don't believe I have quite answered your question.

QUESTIONER: Well, an example, sir, I think "Republic" mentioned something about contingent contracts, and they in turn taking them down to a subcontractor, and whether or not the term "contingent contract" actually meant anything, if they could be enforced at all or if a situation would arise after M-day where production could not be met due to reasons beyond the control of either the prime or the subcontractor?

GENERAL COOK: Do you want my personal opinion on it?

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QUESTIONER: Yes, sir, that is what I was asking.

GENERAL COOK: My personal opinion is that they are not worth very much. I would hate to have that influence anyone. As you say, conditions change, and, unless the contract is renegotiated periodically, at fairly short periods at that, I don't think that the contractor could start off without considerable revision of his plans and the contractual instrument. Personally, I believe in having all production planning and contracting with the contractor who is almost certain to be called upon produce in the event of an emergency. He would have his production planning completed, his suppliers picked out, and perhaps would have done so of the preliminary negotiating with them. The negotiating would be wholly on an informal basis, not on the basis of a contractual instrument, because conditions can change very rapidly. After all, the production planning the prime contractor and getting an idea down on paper in a planning way as to whom he is going to use as suppliers and vendors and telling them plans to use them, and making plans for it is, in my opinion, the most effective way of doing it. Of course, it is the cheapest way. Perhaps look at it from the standpoint of economy. There is less loss to the economy of the country with that type of procedure.

QUESTION: What is the usual practice in absorbing increased labor costs when a plant has had a strike in which workers get increased wages? Does the Government take any of the additional burden?

GENERAL COOK: It all depends on the terms of the contract. If the contract has that provision in it, yes, that is added to the cost of the contract or whatever the negotiated proportion is at the time it occurs, in effecting a change order. In the case of cost-plus-fixed-fee then the Government does absorb all the cost.

There are some details connected with that. The Government is not permitted to absorb the cost of legal assistance which is used for--well I think the labor unions call it--fighting the labor unions. There is a certain proportion of the legal costs that the contractor has to incur even though the plant isn't operating, and if there are any added costs which are caused by the contractor having to take on additional lawyers to negotiate with the labor union, those additional legal costs are not allowed generally, or if they are allowed, there is apt to be quite a high

QUESTION: In handling most cases, private industry doesn't have a chance to negotiate its contracts, so when a contract is made that is it industry either makes or loses money. The Ford Motor Company, in order to get around that contingency, maintains a Price Analysis Department. In contracting for your requirements, does the Air Force maintain a price analyst and just how does he enter into the contracting business?

GENERAL COOK: Yes, I believe that is general practice. It is general practice throughout government purchasing institutions to use

price analysts in the military departments. Those price analysts work generally with the contractors' price analysts until finally they, on items that there is some disagreement about, have a meeting of the minds. Generally, a contract of large proportions is not negotiated without the services of a price analyst, even fixed-price contracts.

Now, in answering the commander's question about the cost of strikes, on fixed-price contracts, there frequently is an "Act of God" clause or article in the contract that stipulates negotiations of certain parts, or provides for renegotiation of certain provisions of the contract--if lightning strikes and the plant burns down; if strikes prevent material coming into the plant; or if strikes prevent the contractor from performing; and so on. In those cases, there does have to be some renegotiation and amendment of the contract to take care of that particular occasion or production difficulty that resulted from the strike.

QUESTION: With the desire of Congress to distribute these government awards to small business as well as to large business, could you give us an example of how we take care of that in the Air Force? Take, for example, the prime contract on the B-36. We have now added four more engines to that airplane. Just exactly how do we handle a large contract like that so small business gets its share?

GENERAL COOK: I assume you are familiar with the provisions of Public Law 413 with respect to small business. At this time, as you know, there is no way in which the Government can pay a premium to small business. Other things being equal, the purchasing department can, in negotiating contracts, direct some of them toward small business firms, but in the case of contracts that are awarded on the basis of formal advertising, there is no choice. If the small firm which has bid is the lowest responsible bidder, it gets the business; if the lowest responsible bidder is a large organization, it gets the business.

In connection with such contracts as the B-36, the only action which the Government can take to direct business to small businesses is to ask the contractor to select smaller concerns where possible for him to get the performance that he desires for his vendor-furnished equipment. The contractor could have small businesses make many of the components of the article that he is building. There can be no legal provision of the contract to require him to go to any smaller concerns if, in his judgment, they cannot do the work that he wants done, the way he wants it done, and when he wants it done.

QUESTION: This has to do with the division of responsibility of the various echelons of the Air Force in contracting administration. We have heard that in war mobilization periods the people in the field are frequently called upon to make spot judgments which would affect contract and production problems. How is that handled in the Air Force? Where is the division made between field responsibility and the responsibility of

your headquarters at Wright Field and the responsibility of headquarters at Washington?

GENERAL COOK: That is a pretty difficult question to answer. I don't like the "division of responsibility" part of it. I will call it "distribution of responsibility" rather. Headquarters in Washington gives the Air Materiel Command basic instructions as to requirements; what it is to purchase or have produced. The Materiel Command has a directorate called "Directorate of Procurement and Industrial Planning" which maintains a centralized contracting agency, particularly for the large contracts. It has branch offices--actually branch offices and not separate stations--in the field, called "Air Force Procurement Field Offices." They actually are a part of the Directorate of Procurement and Industrial Planning, and the main job at this time is contract administration.

The contracting officer who negotiates the contract, generally, is not the contracting officer who administers the contract. There is a transfer of responsibility. However, there is one man who is always responsible. At the time when the negotiation of the contract is completed, and it is a finally approved document, the negotiating contracting officer then has completed his job. The contract goes to the field to the contracting officer who then has the responsibility for its administration.

Now, in time of emergency the administrative contracting officer has considerable leeway. If a change has to be made on the spot, in order to keep production going, he has authority to make that change, but he must immediately report it back to headquarters for confirmation and acceptance by the people who negotiated the original contract. There is quite a procedure set up for that, but I can't tell you of all the details right here because it is fairly complex and I am not familiar in detail with all the actions that are required. Does that satisfy you?

QUESTION: Yes, sir. In a case where you have to renegotiate your contract, due to change in government-furnished property or some such thing as that, is that renegotiation done at Wright Field?

GENERAL COOK: It is done at Wright Field with the assistance and advice of field personnel.

QUESTION: General, what is the approximate proportion between contracts let under bid and under the negotiation type now? And regarding negotiation, which type of negotiation do you prefer?

GENERAL COOK: Well, there are, as I recall, seventeen situations covered by Public Law 413, or seventeen exceptions under which you can negotiate contracts. I think that, in the type of government that we have and that we fight for, open competition is the best way of getting what we need. But that has to be tempered with judgment and experience, and the competition should be between prospective contractors who have the capaci-

or the facilities and the ability to produce what is required, when it is required. I don't mean competition to everybody, including the back alley garages that are looking, perhaps, for a means of getting a little help to build a new garage. Under those exceptions covered in Public Law 413, there are certain types of contract that must be negotiated. You just simply couldn't go out in open competition with some of them, of course, for reasons of security. You don't want the contract publicized. In others, representatives of Government know a particular concern or a particular individual who they know to the exclusion of everyone else can do that job best, particularly in research and development, and in those cases, of course, it is only reasonable that they be negotiated. Negotiation can and should include the element of competition, and frequently better terms can be secured by that means than by formal advertising.

QUESTION: Sir, what I meant was the actual production today, how much, what proportion is coming from competitive bidding and what from negotiated contract?

GENERAL COOK: I can't answer that. I haven't any statistics on that.

QUESTION: We have been told that current contracts are being let with an eye on the future industrial mobilization requirements. That seems too low on the current procurement function and planning function. Could you say something about how future planning functions get into the contractual relations between Government and industry?

GENERAL COOK: What you have been told is true, and you perhaps notice that the Air Force has its procurement function and industrial planning function under the same directing head, the reason being that those two are intimately tied together. We are in certain contracts today permitting or directing the contractor to have tooling and facilities available for a possible higher production rate than is required under the delivery terms of the contract. For example--I won't mention any particular type of aircraft--in a certain aircraft contract, the contractor is required to deliver a maximum of ten aircraft per month, say, over this coming fiscal year. However, he is required to have available and to maintain tooling and other facilities that will enable him to produce fifty aircraft per month if need be, after a certain period of time. Now, that same ratio that I have used doesn't apply to all. That same principle is used in other things besides complete aircraft. So some of the costs of industrial planning are included in production contracts, and that is done with the full knowledge of everyone who has anything to do with the appropriations also.

QUESTION: In connection with that excess capacity that you just spoke of, does the Air Force actually acquire excess production planning? In other words, is there additional planning on paper for excess maximum production?

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GENERAL COOK: Yes, we have.

QUESTION: Do you actually get, and in the case of maximum production requirements, actually use that same set of plans for additional production?

GENERAL COOK: We are not so much interested in having the plans as we are in the contractor having the plans; we think he is the man to do the job and not the Air Force. But we are interested in his having the plans. Additional capacity above what he needs for his immediate production cannot be provided unless he can show justification for the additional equipment or perhaps a more durable type of tools than he needs for the immediate job.

COLONEL HENRY: General Cook, on behalf of the College, I thank you for a most interesting talk and informative discussion period. Thank you very much.

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