A Solution to Well Servicing Rig Productivity

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A LAWN IS MOWED

The other day, I called a fellow to mow my lawn. He had mowed my yard before, so I told him, "Use the same mower you did last time—it did a good job. By the way, start on the west side of the house and use the sack-type grass catcher, then carry all the grass down to the corner of the lot. You can begin around 7:30 a.m." With that, I turned the job over to the fellow and left the rest to him. Upon returning to my home that afternoon, I checked with the yard man to see how the job had gone. He said, "Well, I got it done." But, he added, "If I could have started on the east side of the house about 9:00, the dew would have been dried and I could have done it in about half the time. But, that is the way you wanted it, so I did it that way. You

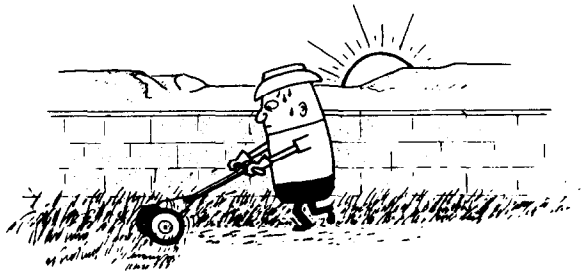
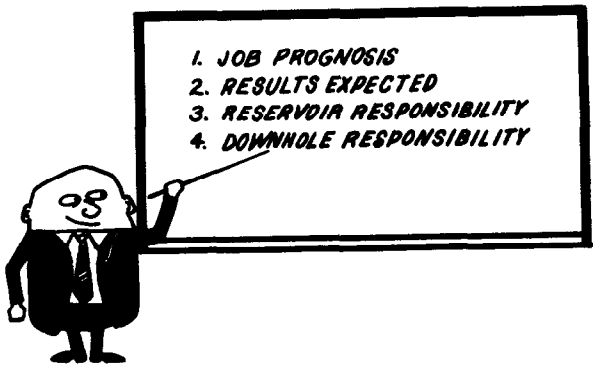


FIGURE 1

FIGURE 2



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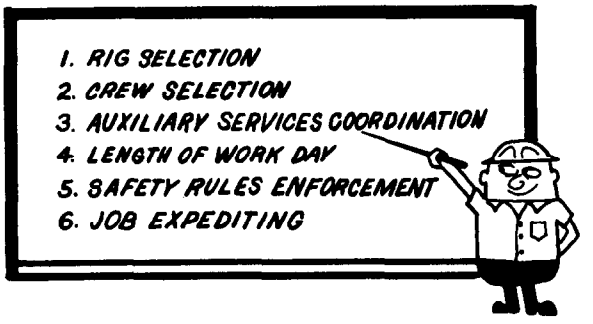

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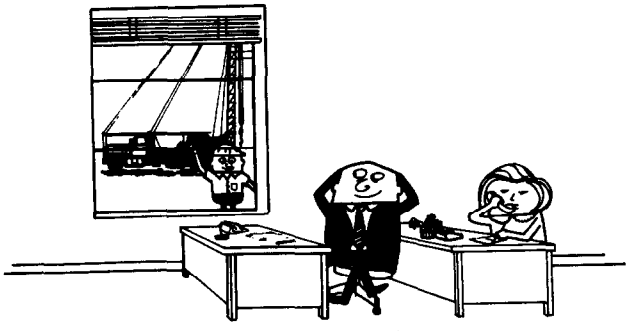

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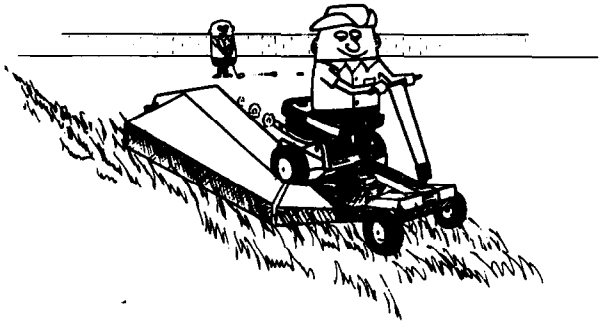

FIGURE 6

know, you told me to use the same mower, and it is a good mower, but I bought a new one since then, and I sure could have saved a lot of time if I could have used the new one. But, you said to use the same mower as before and I wanted to please you. And one other thing, this new mower I have has a gadget on it that chews that grass up in a fine mulch, and most people don't want me to catch the grass anymore. But, you understand now, I want to keep cutting your yard and I will do it any way you say. Now, if it is alright with you, next time I cut your grass, I will use the new mower and start when the grass is dry; and I can save you some money."

That part about saving money sounded mighty good to me. Today, whether we are talking about cutting grass or servicing wells, we are all concerned about getting the "mostest for the leastest".

WHAT IS RIG PRODUCTIVITY?

It would hardly be worth our while to deal further with lawn mower productivity. In seeking to apply our training and experiences to management of production rigs, we must get out our measuring sticks and make some evaluations. Let's decide what we mean by rig productivity and decide how we are going to measure it. For the sake of discussion, let's divide rig productivity into two parts:

(1) The amount of productive work that the machinery and men can do in an hour's time.

(2) The number of hours in a 24-hour day that the machinery and men are actually productive.

We might compare it to the capacity of a well; we say that a well is capable of producing 30 barrels per hour, but we fail to point out that it produces only three hours per day, or a total of 90 barrels per day. Often, outside restrictions may prevent us from producing the well at capacity. If we could produce 180 barrels, or 720 barrels from the same well, which is going to cost us the most to produce, the 180 barrels or the 720 barrels? There will be very little difference in the cost of producing the well at the higher rate. This is the position the contractor is in with an expensive production rig. The experience of those who operate production rigs indicates that operating cost is increasing faster than rig productivity. For a healthy operation, this trend must be corrected. Who can best accomplish an increase in rig productivity? The producer? — the contractor? — or both? To effectively accomplish this, the producer and contractor must work as a team.

A team approach is necessary to accomplish pre-job planning, job execution and post-job evaluation. In our industry today, it may be said with some degree of accuracy that such is not the practice.

JOB PLANNING

Pre-job planning to increase rig productivity must involve **both** producer and contractor and here is how it can be done! First, the producer, sitting in conference with the contractor's representative, presents what is to be accomplished at the well site, or in other words, what he expects to be the end result from the well work being planned. Often the contractor's supervisor and rig crews really don't know what they are setting out to accomplish. Second, the producer goes through steps he expects to get the results he is seeking. At this point, the contractor is to be informed of what is to be done and should be prepared to recommend the type rig, crew, and tools to do this job. The contractor should then study carefully the sequence of events and methods to be used in the down-hole work. After this analysis, he should be able to make constructive comments about the sequence of trips, handling of down-hole tools, and the order in which things are done—in short, all those items that will expedite the job. At this time there should also be an agreement as to what management responsibility the contractor and producer are to assume. This will be discussed in more detail later—this is one of the key points. These considerations would indicate that the job of getting more accomplished at the well site should rest with the contractor.

AREAS OF RESPONSIBILITY

After the conclusion of this pre-job conference, the job would be under the direction of the contractor's wellsite supervisor. This wellsite supervisor would have the responsibility of keeping the producer advised of work progress and advising him of anything encountered that was

not anticipated. During the performance of the job, the producer may, at any time, change plans and procedures, depending on step-by-step results.

In the area of team responsibility, everybody's job becomes nobody's job, and everybody's responsibility, nobody's responsibility. Neither the contractor nor the producer can avoid direct responsibility, and team play would certainly not seek to shift legal responsibility, because of negligence, to either party. The contractor should accept the responsibility of management, the producer accept reservoir and down-hole responsibility, and both should recognize that legal responsibility rests with negligence. This should present no problem. Unless there are contractual specifications otherwise, liability of management is predicated upon the negligence of management or those under management control—no negligence, no liability.

RIG PRODUCTIVITY THROUGH WELL SITE SUPERVISION

At this point, let's talk about rig productivity at the time of executing the job. Referring back to our job of mowing the lawn, you will recall that I specified the time for the fellow to start, designated a mower to use, and told him how to catch the grass. Quite often the well service contractor experiences the same thing. The real question is, who can best get the most done in an hour, or in a day? Whose direct supervision will accomplish the most rig productivity? It is the opinion of the author that the contractor is best equipped, best trained and most experienced in the operation of production rigs, and the responsibility for increasing rig productivity during job execution rests squarely on his shoulders. For him to exercise this responsibility and accomplish an increase in rig productivity will require more confidence on the part of his teammate, the producer.

RELEGATION OF RESPONSIBILITY

To justify this confidence, the contractor must better educate himself and his men in the area of wellsite supervision. It is within the realm of probability the time will come when the producer can feel completely confident in consigning complete responsibility to the contractor. This relegation of responsibility to the contractor will not **in any way** decrease the authority of the producer; rather it will increase the effectiveness of his management. The contractor will actually be a valuable addition to his management team. In other words, the producers' representatives would be managing supervisors—in this case, wellsite supervisors, rather than being an "errand boy", "clerk" or "nipple chaser!" We are of the opinion a better plan is to have effective, well-trained, wellsite supervisors from the contractor. This man must call on the rig frequently, and rather than drive by, lean out the car window and yell, "Hey, how's she going?", then drive off, causing the producer's representative to have to stay at the wellsite to see that the rig's job is being done, pass the wellsite supervision to him.

Why not relieve the overloaded producer's representative and allow the contractor's wellsite supervisor to step in and do the job he should have been given at the start?

Now you might ask, what is the contractor doing to provide better trained field supervisors? One solution for the need was supplied by the Association of Oilwell Servicing Contractors when it conducted the first of a continuing series of wellsite supervisors' courses at the University of Oklahoma in October, 1967. Another course was presented last month and still another will be offered in October of this year. The association is also setting up similar schools in Casper, Wyoming, Lafayette, Louisiana, and Long Beach, California.

POST-JOB EVALUATION

Without a post-job evaluation, little or no improvement will be made in developing the techniques of this management team. One responsibility of the contractor is getting results—putting oil in the tanks. Unless the producer shows him what he has or has not done, the contractor may lack a yardstick for measuring his progress. This calls for making a post-job conference a regular part of your workover program. The producer realizes that a successful job is not just one with a reasonable payout and profit, but also one in which the production rig was operated in such a way to net a profit to the contractor. What I am trying to say is, that a production rig not operating at a profit is a liability to you, the producer, to the contractor,

and to the industry, and will shortly drop from the scene. Modern data processing equipment now makes possible an accurate per rig accounting system, a bit of well servicing cybernetics, if you will. Without such a method, rig productivity would never really increase significantly. At the conclusion of the job, if you can say you have gotten a safe, well-performed job and the contractor has realized a profit, then certainly we are on the road to a more efficient job at the next undertaking.

PRODUCER-CONTRACTOR MANAGEMENT TEAM

This is where we have real team play. Now we can see the results that could be achieved by the producer-contractor management team. The producer knows his objective, knows what he wishes to achieve, and the contractor is to implement it. To accomplish this, he must apply available means of automation, he must have the best in machinery, his wellsite supervisors must be well-trained and experienced, and the management at the wellsite must be his. With this confidence in the contractor and these tools to work with, the team results should be a reduction per barrel lifting cost, coupled with increased production rig profits.

The question remains whether the contractor will accept the challenge of providing supervision for management and increased rig productivity. Will the producer put the contractor on his management team?

In conclusion, let me remind you of something of which you are well aware. We, in the industry, are faced with ever-increasing costs in the operation of production rigs. There is no indication that labor and machinery costs are going down. If the past is indicative of the future, there will be further increases; therefore, the challenge rests with us. In all probability, production rigs are operating below their optimum capacity. The question is not **whether** rig productivity can be increased, but **when** are we going to undertake this task? Our team efforts in this direction will result in a healthier oil industry, a better rate of profit for the oil producer, and stronger, more competent contractors.