

CONTRACTS, QUALITY ASSURANCE AND RISK IN THE OFFSHORE SURVEY BUSINESS

by W.J.M. ROBERTS (*)

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There is no doubt that surveyors involved in any aspect of the offshore survey industry have an absorbing job. It is equally certain that they are in a difficult business. These difficulties do not arise only from the ever increasing complexity of the technology; there is just as much need for care and preparation in tackling the administrative and contractual aspects of the work.

Where surveyors get a chance to get together at various symposia and conferences it is a fairly safe prediction that the whole of the programme will be taken up with study of the techniques and technology of their work. Few would deny that, as professionals, we have tended to skimp on consideration of the equally important management problems. This session at Hydro 86, devoted to aspects of the latter subject, is therefore particularly welcome.

This is a discussion paper. The views expressed in it are personal; they do not necessarily reflect the thinking of any corporate organisation.

SOME OF THE RISKS

It is by no means unusual for quite large offshore survey companies to have firm order books that guarantee their survival for not a matter of months — but of weeks. This is the basic risk, and it is quite hair-raising. To put matters in scale, a quite large offshore survey company, in 1986, could be thought of as one with an annual turnover in excess of £2,000,000.

The survey manager will be used to the employee who asks 'Why waste time on detailed forecasting when ninety per cent of it must be guesswork?' The

(*) Director and Chief Surveyor, Rascal Survey Limited, Capel House, 262 Burlington Road, New Malden, Surrey KT3 4NN, UK.

simplistic answer must be 'Try going along to your bank manager for finance to start up your business without a forecast, and see what happens'. But of course a forecast has a wider purpose than that. A well researched and appropriate forecast is itself, amongst other things, a statement of the risk involved. The degree of risk is entirely irrelevant to the necessity for a careful forecast. Without it there can be no sensible plan of action, no co-ordination, no command and no control. The logic is simple, impeccable and inescapable.

A few years ago wide publicity was given to a theory, expounded by Prof. J.K. GALBRAITH and other eminent economists, to the effect that the largest multi-national companies were so powerful that their forecasts shaped world events into a passable image of their predictions. It was left to us lesser mortals to be wrong footed by the events of each passing day. But you may have been a passenger who has flown over any one of a number of anchorages around the world, and counted fifty or more large ships laid up and with no early prospect of economic employment. It is spectacular evidence of the difficulty of forecasting in even the largest of corporate activities.

As contractors, we have an additional difficulty. Any large organisation, in considering its future business, may foresee that a particular specialist ancillary activity can be expected to continue at least at a certain minimum level for some years ahead. The organisation might thus decide, quite reasonably, to build into its plan a capability of its own to cover this minimum level. The effect of this, as illustrated in Figure 1, is to push most of the uncertainty in the forecast into the contracted out sphere.

The graph could represent, for example, the survey activity predicted for an overseas operation of a multi-national oil company. The curve shows a regular,

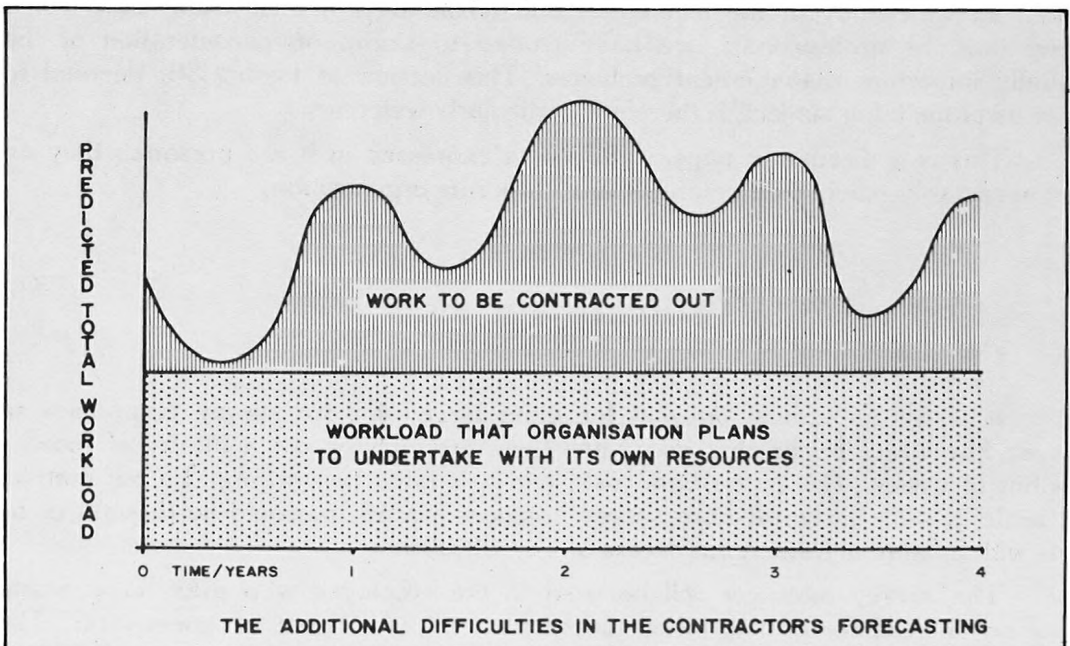


FIG. 1.

partly seasonal workload with an added specific project in the second and third years.

Forecasting is a universally unpopular and even painful subject. Space has been given to it here because it has to be accepted that even in a high risk business like ours, a well researched forecast is a necessary and constant precursor for any plan of action.

By big business standards, the world-wide offshore survey market is a small fish in a large sea. And yet survey companies soon find themselves having to face up to many of the problems that afflict the large multi-nationals. A surveying group organised to service only one particular oil province around the world will be subject to many pressures outside its own control: seasonal workload, the effects of political bargaining and government action, technical innovation, and the rest. In order to spread the risk, such groups will be looking for work worldwide — despite the added difficulties to be expected from overseas contracting. Because of the harsh environment, and the highly technical and responsible nature of the work, overseas survey operations require an expensive degree of back-up. An employer will now be lucky to get any change out of £50,000 from maintaining one trained man and his family overseas for a year, even where the basic salary may be less than a quarter of this amount. For a comparatively small turnover these companies have to cope with all the difficulties of complex registration procedures, constantly changing foreign company law, import/export delays, frequency licencing, and other technical matters. Tax legislation in many overseas countries is far from clear; one company, not much more than a year ago, found itself having to pay tax at the rate of 40% of turnover on a sizeable survey contract — not 40% of profit, but of turnover. The

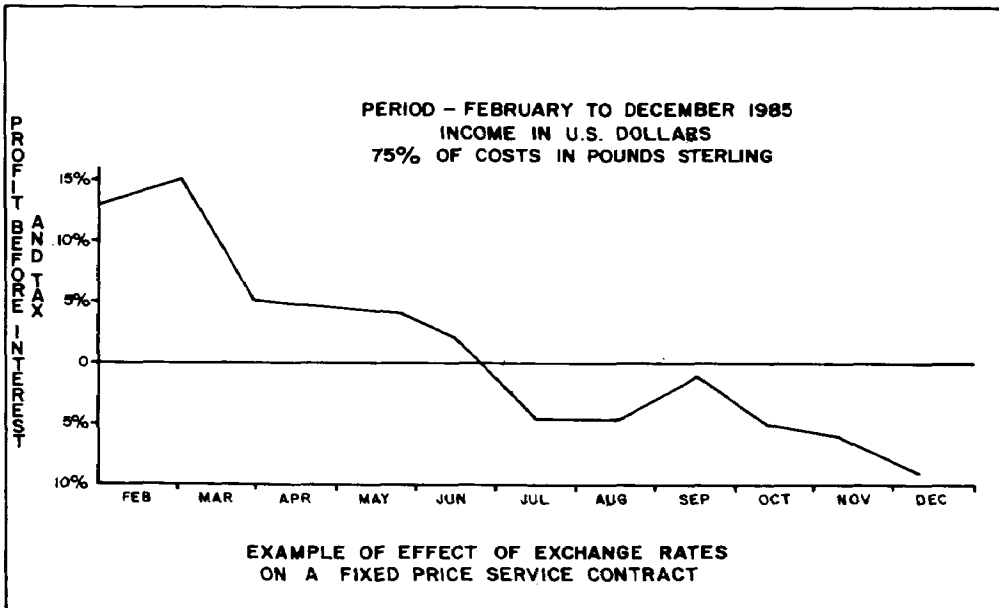


FIG. 2.

decision as to where and when to set up a largely autonomous overseas centre is never straightforward.

Then there is always a currency risk. Many currencies are convertible only with the greatest difficulty, and others not at all. Exchange rates have been volatile and unpredictable for years. Figure 2 uses the actual pound sterling/U.S. dollar exchange rate from February to December 1985. It illustrates what would have happened to the profits of a fixed price service contract entered into in January 1985. It assumes that the project was costed to give a profit, before interest and tax, of 13%, that income and 25% of the costs were in U.S. dollars, and that the remaining 75% of costs were in pounds sterling. It can be seen that currency risks alone can make a nonsense of an otherwise healthy project; not that a profit before interest and tax of 13% could be considered healthy in this business in any case.

Now to a risk familiar to all seafarers. Bad weather. Our business is particularly sensitive to this risk. The work is usually conducted from small ships, and the quality of some of our measurements rapidly deteriorates with increasing winds and waves. Whilst the risk is familiar, is it yet fully appreciated how widely our weather patterns vary from the statistical averages?

The following diagrams have been constructed from data supplied by courtesy of The Meteorological Office Bracknell. From Cape Wrath regular reporting provides good statistical data through each day from 1957 to the present. As one would expect, in the month of January (Figure 3) there is some 'no go' weather, but there have been some quite reasonable months of January

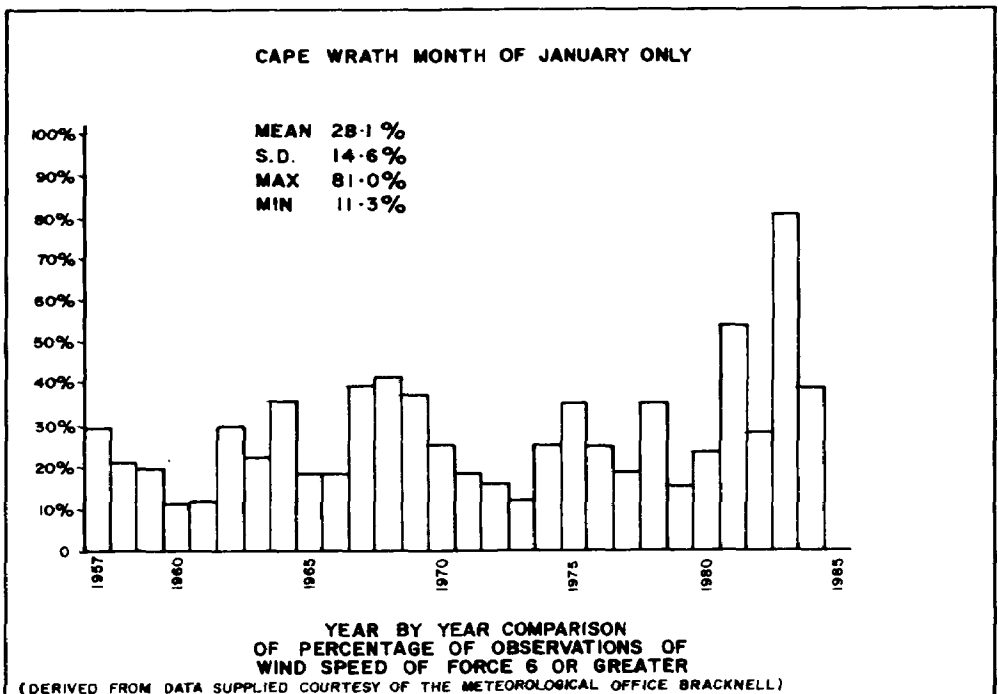


FIG. 3.

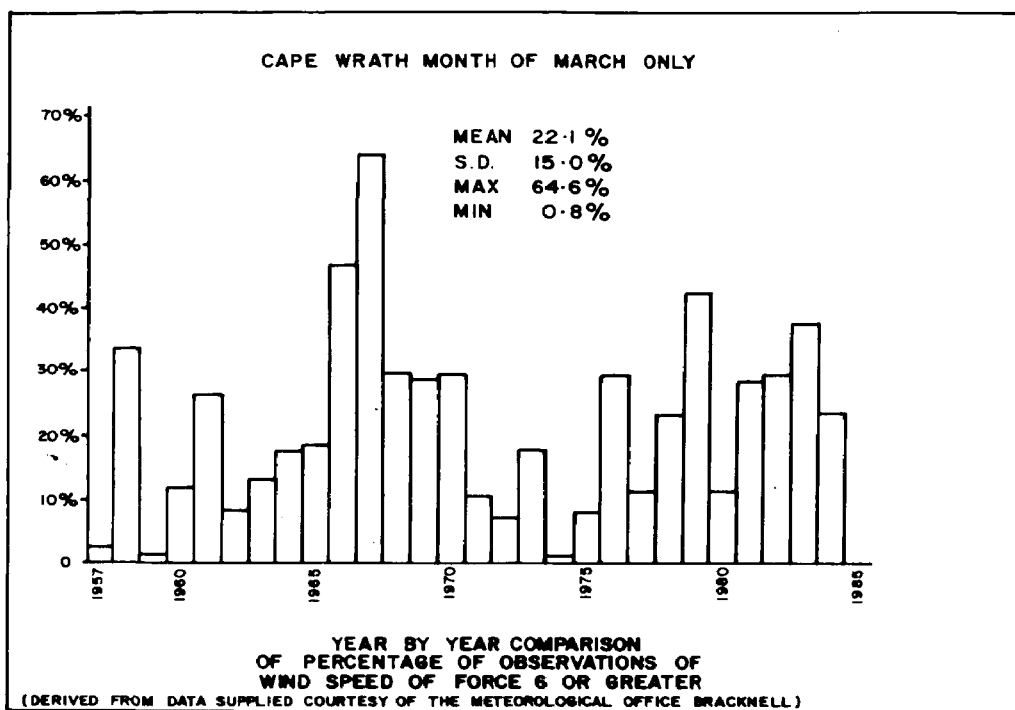


FIG. 4.

as well. The months of March (Figure 4) are not much better; indeed the variation from the mean is even worse, and the extremes vary from virtually no downtime to two-thirds downtime.

The months of October show much the same pattern — or lack of it. Consideration of the means of annual figures (Figure 5) is even more surprising. There is still wide variation from the mean and still no identifiable pattern. Throughout the whole year of 1967, the wind strength was greater than force 5 for over 32% of the year, whereas in 1972 the equivalent was less than 8%.

The message is clear. These statistics have their value, but to use them to put a figure on downtime next month, or even throughout next year, is a complete gamble. Reasonable statistics do not even exist for most of our survey sites around the world.

The acceptance of some degree of well considered risks is a necessary part of any and all business activity; to gamble in business is for fools. And yet, in the offshore survey business, albeit reluctantly, we offer lump sum prices, even in the middle of winter, for jobs that might take a few days or many months.

By this time the reader may be wondering whether offshore survey is a sound business to be in at all. It is probably no bad thing for a manager in any business, even an apparently low risk highly profitable one, to stand back and ask himself this question from time to time. It is a very unimaginative and narrow-minded survey manager who does not ask himself the question quite frequently.

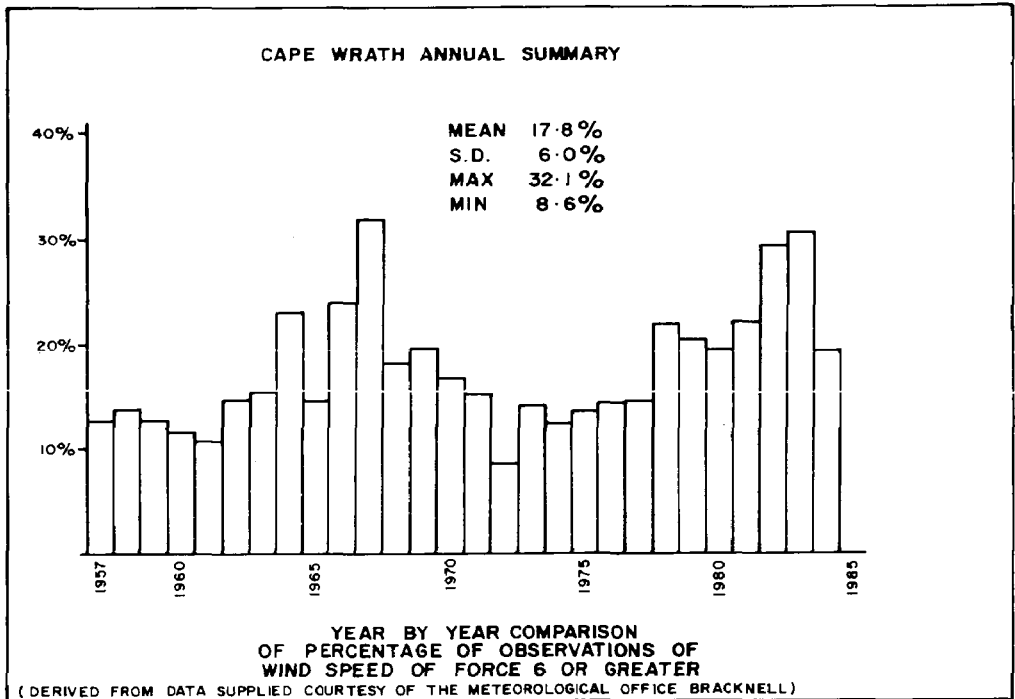


FIG. 5.

TERMS AND CONDITIONS OF CONTRACT

In the past, the staff surveyor was the man who, when a fat tender document was slapped on his desk, would extract the Scope of Work and delve into it immediately. He would work like a beaver, long hours for day after day. He would do a fine job considering the cost of reconnaissance, the logistics, his access to resources of men, ships and materials, and much else. Eventually, tired but triumphant, he would emerge with the Contract Price. The contract itself may have been sent off unopened to his legal advisors for their clearance. His expectation would be that no reply would be received from the lawyers before contract signature in any case. In the unlikely event of such a reply being received, its only effect would be, he would think, to slow things down and put unnecessary difficulties in the way.

His approach has changed. He has learnt to take more than a passing interest in the Contract itself. Further, he takes care, or at least he should take care, on award of Contract, to brief his Party Chief on the Terms and Conditions as well as on the Scope of Work. No surveyor in charge on the survey ground can be expected to do a professional job unless he has a working knowledge of the one, as well as a detailed knowledge of the other.

Broadly, there have been two reasons for this change. The first is quite simply that our industry is gaining in experience; offshore survey is still in a comparatively early stage of development. Secondly, and in parallel, the construction of appropriate contract terms and conditions for offshore survey has also been developing. As experience and case history grow, it is in the nature of things that more and more specific liabilities and responsibilities are placed on the contractor. But some of the contracts now being offered contain clauses which are quite unreasonable. The overall risks in such documents can be out of all proportion to the potential earnings. It has to be a golden rule that one should look at the black side before deciding a commitment to a contract.

The dangers do not lie so much in those cases where a survey company contracts for work direct with a major oil company — although these documents can be fierce enough. A greater imbalance tends to appear where the survey work is awarded through a succession of open tenders cascaded down from the principal contractor. In these situations, the full weight of the liabilities is often maintained down the chain from the principal. Each successful subcontractor adds his own pet clauses, and meanwhile the contract price for the survey part of the work may be less than 1% of the whole. The remotely awarded contract will also be weaker in its Quality Assurance and built-in redundancy specifications.

The following are a few of the matters that require attention in assessing a set of contract terms and conditions.

Liability

Again, looking on the black side, what is the worst possible outcome in the event of non-performance or a disaster of some sort? Does the contract specifically limit liability? Do not confuse a requirement for insurance cover to a given figure with liability limits. The two are usually independent of each other.

Negligence and Indemnity

A reasonable starting point is that one should expect each party to indemnify the other for consequences of its acts or omissions. Contracts have appeared recently in which this cross indemnity has become very one-sided. In some cases the contractor is being expected to take responsibility for not only his own men and equipment, but for that of his client as well.

Consequential Loss

Interpretation of this phrase in relation to a given set of circumstances can lead into heavy legal technicalities. The lawyers refer to a test of remoteness of cause and effect and consider what may reasonably have been in the contemplation of the parties at the time of entering into the contract. In 1933

Lord Justice Wright had this to say on the subject '... it were infinite for the law to judge the cause of causes, or consequences of consequences. In the varied web of affairs the law must abstract some consequences as relevant, not perhaps on grounds of pure logic, but simply for practical reasons'.

The principle of exclusion of consequential loss appears to be well understood in the oil industry. But, in view of the grey area indicated above, a bald statement to this effect is not enough. A survey company may yet thank the day when it ensured a full clause with specific reference to 'loss of profit, product, use, revenue, interest', and whatever else may be agreed. Offshore, where the projects are vast, and the survey content tiny, the extra phrases could mean the difference between survival and receivership.

Insurance

No survey manager can be in the business long without realising the essential place, and the complexity, of the broad spectrum of cover that we need. Invariably, contractual insurance clauses should be submitted at an early stage direct to the insurers as well as to the legal advisors.

Publicity has been given over the past year to hefty increases in insurance rates. The increases do not apply only to the offshore industry; they appear to be universal, and apply in some degree to most types of cover — marine, public liability, product, employers liability, all risks and motor vehicle. In the particular field of Professional Indemnity insurance, premiums of over four times those of a year ago have been reported. At the same time the excess (that first part of any claim carried by the insured) attaching to the policies has become very substantially heavier. Despite this more expensive insurance, choice in the market for Professional Indemnity cover is restricted.

Some of our survey contracts continue to require ever bigger limits of cover. A few of them now demand many millions of pounds of Professional Indemnity, and many tens of millions of pounds of Public Liability cover. These figures, and the premiums which attach to them, really do not sit comfortably on the back of a contract price of a few tens of thousands of pounds. There is even reason to believe that survey companies are being, in some situations, contracted to provide areas of cover for which their clients are unable to obtain quotations for themselves. When combined with contract clauses naming the client as co-assured, the arrangement can provide a degree of operating security, but at the contractor's risk, which would not otherwise obtain.

Insurance company rates have not increased without cause. The recent claims record has been poor. There appears to be an increasing readiness for contracted parties to seek redress for damages through litigation, where previously such matters were settled by arbitration or negotiation, and courts have been awarding increasingly generous settlements. This trend has become most apparent in the United States. Quotations for international insurance cover now quite frequently exclude business in the United States or under U.S. State Law. Are we going to see an increase in the phenomenon whereby professional men (currently surgeons in the United States) cease to practice in certain high risk sectors of

their skills?

But the claims record of the survey industry has been good. Whilst we do have some understanding as to why it is that the insurance world has to 'take a view' in assessing a risk, we laymen cannot help thinking that the breadth of this view acts to the disadvantage of surveyors. We also question the scale of the premium increases. Do they contain an element of over-correction? We must certainly hope so.

More ominously, another cause has been postulated. It has been suggested that within the past two years one or two massive and catastrophic claims have entirely changed the view of the market on Professional Indemnity insurance. Many insurers have decided to stop writing this type of cover altogether. Even the few that are left remain in the business without conviction, and write it on a 'take it' or 'leave it' basis.

Suspension, Termination and Force Majeure

There is really no justification for lumping these three subject together, other than the pressure of time and space imposed by a discussion paper.

What would happen if ...? This question needs to be asked in the context of all the likely and unlikely combinations of events that can be foreseen. Is there a risk of resources being contracted to remain on site after suspension? If so, for how long? Is adequate compensation allowed during periods of suspension? In the event of termination is the work completed to date capable of being clearly defined as a proportion of the original Scope of Work? Does the contract give guidance on the method of calculation and remuneration in each circumstance?

The answers to such questions are not always satisfactory. Contracts still appear which are incomplete adaptations from old civil engineering construction documents. These may be precise on ensuring that the contractor leaves no building materials on site on demobilisation, but silent on foreseeable eventualities for the early termination of a marine survey.

The concept of Force Majeure is simple enough. It is indicated by the definitions given in Chambers and The Concise Oxford dictionaries. These are, respectively, 'Superior power', and 'War, strike, act of God, etc., excusing fulfilment of contract'. But there appears to be nothing simple about any attempt to give the phrase a definition which would be useful in assessing its application to any given set of circumstances. For our present purpose, suffice it to warn that interpretation is not straightforward and differs from one legal system to another.

For this reason, and because it always helps if both parties to a contract have the same understanding of its contents, it has become usual to spell out the Force Majeure clause in fair detail. There may be a statement of the principle as it applies to that contract, a definition of the conditions which must apply to constitute 'an event of force majeure', followed by a listing of events which are foreseen as a possible prime cause. But a Force Majeure clause is sometimes entirely missing from the contracts offered to us, and requests for its inclusion are not always agreed as being reasonable.

WHAT IS BEING DONE AND WHAT SHOULD BE DONE TO MITIGATE THESE RISKS?

No Bid

Entirely negative though such inaction may be, the first line of defence has to be to offer 'No bid'. This solution, if it can be called a solution, is particularly frustrating for the potential contractor if the Scope of Work is well within his capabilities and available resources. Contracting risks are now such that it is almost certainly within the experience of all major offshore survey companies in the country that they have at some time declined to offer a bid — despite the attractions of the Scope of Work. Only a few years ago it was a common boast amongst survey managers that they would never turn down an offer to bid. That is not so today.

Sometimes these negative decisions are easy. Perhaps payment is in a currency which has little value for the contractor for example. More frequently the decisions are difficult. They require a cold, hard-headed balancing of the ever-present need for profitable work against the known and to some extent quantifiable risks, and also the unknown factor, which can only be guessed. No matter how carefully the homework is done, there has to be some degree of subjectivity in the decision. Nor can the decision ever be proven to have been right or wrong. It was dealing with events in the future which never happened. The eventual success, or preferably failure, of the competitor who was fool enough to take the risk, is a poor guide to what would have happened in one's own case. Thus, the next time such a decision has to be made, it again has to be decided individually and separately on its own balancing factors. Also, the decision has to be taken early, before valuable management time is wasted on bid preparation.

Negotiation

Historically, the negotiating power of the offshore survey industry appears to have been minimal. Perhaps this is not unexpected in view of the fierce international competition for the work and the vast corporations and governmental authorities whom we mainly serve. The need for reasonable and fruitful negotiation is stronger now than it has ever been. Such successes as have been achieved benefit the whole industry in that they tend to be perpetuated into the Terms and Conditions of subsequent contracts from the same client.

Those of you who have tried negotiating contract terms in this business will have experienced something like this. Your first overtures were greeted with shocked silence. When the client's representatives recovered, you were coldly informed that those Terms and Conditions had never been questioned before. They were carved in marble, they said, and any continuance of that line of discussion would not be in your company's interests.

Our bid invitations often require that they be returned with a signed bid certificate spelling out tenderer's acceptance of the pro forma Terms and Conditions without amendment. In addition, a substantial 'first call' bid bond may be necessary. In these cases the tenderer's negotiating power is obviously subject to the client's good will. It cannot even be taken for granted that forfeiture of the bid bond releases the tenderer from all his obligations following a late withdrawal of an accepted offer. Even in these situations it should never be assumed that any negotiation of risk is an impossibility. But every step in the exercise of such brinkmanship requires a very clear understanding of the down side of the outcome — and before that step is taken.

Negotiation stands little chance of success unless it is entered into with a reasonable, finite and verbatim alternate to offer in place of the clauses the contractor wishes to change.

A contractor entering into negotiation with a powerful client should remember that it is not only the work that is being transferred to him. A degree of risk is being transferred as well. One of the aims of good negotiation is to arrive at that degree of transfer of risk which is in the best interests of *both* parties. It is obviously not in the interests of the client to transfer none of the risk. Perhaps it is not quite so obvious that attempts at transferring all the risks are not in the client's interests either.

Large offshore operations will usually employ a number of contractors. Where an employer has been over enthusiastic in contracting out the risks to these people, the effect will be to generate a vast over capacity and duplication of insurance cover — eventually at the employer's expense. Small, specialist, and possibly entirely competent companies will be tempted to accept liability for types of risk that, in the event of calamity, they would find themselves ill-equipped to survive. In the offshore business, calamity can befall the best of us. It makes sense to retain responsibility for, and insure as far as possible against, the catastrophic possibilities at the centre.

In our business we see well drafted, appropriate, onerous and tough contracts which we willingly acknowledge are basically equitable. In 1986 the sighting of such documents has become a refreshing change. The remainder, in varying degrees, are inequitable, inefficient and unrealistic in their allocation of risk. This opinion is not confined to our survey industry, or even to the generality of the offshore industry. Especially, it is not confined to this country. It is now widespread.

However, our interest is in offshore survey. Given time, perseverance and courage in our negotiations, we can effect significant advances in redressing the imbalance which has gradually developed over the past decade.

Quality Assurance

Most offshore surveyors will by now have heard of Quality Assurance and many will have had experience of what it means in practice.

The whole of the training of a surveyor has taught him to subject everything

he does to a checking procedure, and then subject it all again to an independent check. His first acquaintance with the rather bureaucratic procedures of QA is consequently likely to engender some scepticism. In a complex operation the implementation of a full QA plan generates a great deal of paperwork. And it is expensive. Typically, on a pipeline route survey requiring the allocation of seven technical field staff in addition to the ship's crew, two extra men — the QA Manager and his assistant — would be deployed full-time.

And yet, as surveyors, we should wholeheartedly welcome the imposition of QA procedures. Whether we welcome them or not, we will become heavily involved.

On the positive side, a QA plan ensures that thought has been given in advance to every foreseeable cause of malfunction, non-performance or disaster. Not just the survey causes — but any cause. Lack of a current ship's safety certificate or current tax clearance certificate has as much potential for holding up a survey as a radio positioning receiver that has been inadequately workshop tested or an echo-sounder that has not been checked.

This forethought is translated into a detailed QA plan directly applicable to the project, and the plan is broken down into specific Quality Control procedures — procedures of checking, testing, maintenance certification and recording. The precise state of implementation of the plan then becomes capable of being audited, both internally and externally.

Any good survey company will already have most of the mechanics of Quality Control in place. There will be good workshop testing procedures and regulations for field maintenance and checking — even in the absence of a QA department as such. With the increasing complexity and responsibility of our work this is no longer enough. The client has a right to expect the assurance of a well prepared plan and a demonstrable and auditable statement of its implementation at any stage. No plan can guarantee success but formal QA procedures undoubtedly minimise our risks.

Do not believe the QA consultant who tells you that QA costs nothing, and that in fact it saves money because it prevents disasters. There is some logic in the statement but the very existence of consultants in the business should be sufficient warning that money is involved. A great deal of money. And we have to take full account of it in our costings.

Herein lies a danger. Whilst we are in this transition phase into full QA, we shall find ourselves employed by contractors who pay lip service only to these procedures. This creates a fine opportunity for the gamblers to undercut a fully prepared bid.

We surveyors should not only welcome the introduction of QA, we should positively encourage its imposition through tightly written contractual clauses which preclude any short cuts.

Personnel

Any summary of risk assessment which failed to acknowledge the place of

people in it would be unbalanced. Quality of personnel and their appropriate training remains the biggest and most important factor in the control of risk. Automation has not changed this priority in any degree. Nor will Quality Assurance.

Postscript and Acknowledgements

The brief references to legal matters within the paper cannot be accepted as being authoritative in any sense. Summarising of such subject matter can be dangerous at the best of times, and in this context it has to be said that the comments are those of a layman.

The author's thanks are due to two of his colleagues for checking through the draft and for their suggestions. The permission of Racal Survey Limited for the presentation of these personal views is gratefully acknowledged.