

SOLE RISK IN MINING AND PETROLEUM VENTURES: AN INTERNATIONAL PERSPECTIVE

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Despite its title, this paper will not deal with mining, for the very good reason that the writer knows very little about it — at least from an international perspective. By the time you get to the end of this effort (if indeed you do), you may have concluded that the writer knows little about the oil industry either, and that the last 18 years of his life would have been better spent playing golf — if indeed they were not! Were you to limit your judgment to sole risk I would not necessarily take umbrage. For, despite its conceptual importance to the industry, it is seldom availed of (as distinct from threatened) and, consequently, there are few, if any, in the industry who could claim to be expert thereon.

It is unusual to find an operating agreement which does not permit of operations of some form or another being carried out at 'sole risk', however that may be characterized. Likewise, it is unusual to find an operating agreement which, in all circumstances, will require the minority to go along with and participate in, all operations approved by the majority, and not permit that minority to 'stand-out' and go 'non-consent'. Given this and given the often lengthy and complex provisions which govern this aspect of the operating agreement, the casual observer might be forgiven for believing that the relevant clauses are often in play, with individual co-venturers charging around the place, each doing his own thing, earning and suffering penalties and creating a nightmare of interlocking and overlapping rights, accounting entries, taxation liabilities and operational obligations. But various factors contribute to the comparative infrequency of sole risk and non-consent operations.

It is trite to say that oil is where you find it. But exploring for oil is a high risk business — and, in the end, there is only one way to find it; by drilling a well. Wells are expensive and the oft quoted statistics of exploration success, such as 1 in 10 or 1 in 30, disguise the fact that, for the industry to achieve even those sorts of success ratios, some groups and companies have to run out of money before any success in order to balance the statistical impact of those who, just occasionally, get lucky first time around.

This, then, leads to three competing pressures. One, that no co-venturer will wish to be denied the opportunity to chance his arm on a prospect he wants to drill, and go sole risk. The second, that no co-venturer will wish to be denied the opportunity to husband his resources and allocate them as he sees fit, if necessary non-consenting. Unfortunately, the second severely impacts on the first, for, in the first case, if his co-venturers will not participate with him, our sole risk co-venturer will have to commit more of his precious resources to one well, thus denying himself the

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opportunity to participate in another elsewhere and breaching his overriding principle that it is better to have 10 per cent of 10 wells than 100 per cent of 1 well.

The third pressure — the simple and understandable one of fear and confidence. The nagging fear that the well he does not participate in will be a discovery (despite his own reservations as to the prospectivity of the location), is a powerful force dragging the reluctant participant along. Similarly, the fact that no one else seems willing to go ahead and drill is a powerful confidence destroyer for even the most aggressive explorer (or at least his management).

But other problems play their part. It is not easy to mount a sole risk operation. Approved financial and manpower budgets will be severely disrupted. The necessary skills may just not be available in-house to our aggressive co-venturer; nor may the necessary services and equipment be available in the area of the proposed operation within the time scale required.

And the legal and commercial impact of going sole risk or non-consent may, unfortunately, be far from clear. I have often heard it said that the object of a good sole risk clause is that no one should ever go sole risk. Not a great difference!

One perceived difference between sole risk and non-consent is numbers (or, to be more precise, percentages). Sole risk is the minority conducting an operation which the majority stands out of; non-consent, the majority conducting and the minority standing out. But, as the majority/minority test for these purposes is usually related to the operating committee voting pass mark for the approval of an operation as a joint operation, and as this is usually well in excess of 50 per cent, a 'simple majority' can end up conducting a sole risk operation.

The other perceived difference is that it is somehow more reprehensible to stand out of an operating committee approved operation (thus letting the side down and causing everyone budgeting problems, if not also a severe attack of nerves regarding the worth of the operation) than to chance your arm on a play no-one else believes is worth a bean. Hence, the penalty (which, of course, legally it is not but which universally it is called) suffered by the non-participants and enjoyed by the participants, is usually greater in the case of non-consent than it is in the case of sole risk.

In the past, many operating agreements contained both sole risk and non-consent provisions substantially operating in conformity with these perceived differences. An operation would be proposed to the operating committee. If it achieved the required majority it would be approved as a joint operation (*i.e.* one to be charged to the joint account) and any co-venturer which had voted against the operation would have a short period of time in which to elect not to participate (to 'non-consent') and to suffer a prescribed penalty. If the proposed operation did not achieve the required majority then, within a short period of time, a co-venturer could propose the operation as a sole risk operation and any other co-venturer not electing to participate therein would suffer a penalty, which would usually be less than that prescribed for a participant 'non-consenting' to a joint

operation. Not all clauses operated precisely in this fashion, but the principles were common.

Purists would note the possibility that an operation initially not approved by the operating committee and subsequently proposed as a sole risk operation, could end up being supported by co-venturers holding sufficient votes to have approved it as a joint operation in the first place — but generally this would not operate to convert the operation from a sole risk operation to a non-consent, for to do so would involve an *ex post facto* change in the penalty to be applied to non-participants. Consequently despite the perceived reprehensibility of non-consenting to a majority approved operation, a co-venturer effectively could be non-consenting but suffering only the sole risk penalty — and all because maybe only one other co-venturer who had initially voted against the operation elected nevertheless to participate therein when it was proposed as a sole risk operation.

Agreements which also allowed all co-venturers to change their minds if one non-consented to an approved joint operation (because of the increased share of costs which would then have to be borne by each of the participants) could also result in an operation being effectively conducted by the minority at their sole risk but earning the non-consent penalty.

Perhaps this is one reason that the tendency today seems to be to merge the two, with the sole risk/non-consent clause (the titles are becoming interchangeable) being available in regard to specified non-obligatory work (*i.e.* work not required by the licence) which is not approved by a 100 per cent vote of the operating committee (the voting pass mark required to have the operation approved for the joint account), and the same penalty applying irrespective of the number of eventual participants. Generally, for the balance of this paper I shall follow this trend — the problems generally are the same. In either case, whatever the reasons, less than all the co-venturers are participating in an operation; and this is where the difficulties arise.

Throughout, I shall talk in terms of 'oil' although, in general, my comments are also applicable to gas. And, for general reference, I shall refer to 'licences' and 'licensees' although, once again, the comments are applicable to all types of petroleum titles. I have also briefly referred to certain technical aspects of exploration, geology and geophysics. In context and for the purposes of this paper, the comments are accurate enough — but they wouldn't get me a job as an exploration manager. My company's exploration manager's comment was — 'well, you're getting there'.

Two further points. This paper is intended to give an international perspective. Some (though I suspect not all) of the problems discussed may have found a local answer in one or more of the more mature provinces where, at least in some respects, the commercial and operational conduct of the industry (and the agreements and laws which govern it) is more sophisticated, if for no other reason than practice. Secondly, those who asked me to prepare and present this paper suggested I should concentrate on the practical aspects. I am delighted to attempt such an emphasis for, as an in-house (as distinct from 'out-house') counsel, my working life has been spent living with the consequences of my (and other's) agreements —

but I can't promise (nor is it possible) to entirely separate the 'practical' and the 'legal'; for, as often as not, if one don't get you, the other one will. What I am not attempting, however, is any in depth, academic legal analysis of the topic — rather, random observation and comment. If, in the course of this, I am guilty of repeating, without deserved acknowledgment, the previous writings or work of others, I apologize. It is not my intention to claim any credit for their work.¹

WHY SOLE RISK?

A reasonable enough way to examine sole risk in the industry is to work through a typical clause and look at the reasons for and constraints surrounding some of the major provisions. And the first logical question is, why have a sole risk clause at all?

Before proceeding to that however, I would like to set the international scene within which to discuss the topic.

Broadly speaking, the world is divided into two different types of oil fiscal regimes, both of which present their own special difficulties for sole risk. The first, with which you will all be familiar, as it is that applicable in Australia, is the Royalty and Tax Regime. From the point of view of sole risk, the important aspect of this type of regime is that it is a royalty and *individual* tax regime *i.e.* while royalty may be chargeable on a joint and several basis on the licensees (and on that a comment later), taxes (at least of an income, capital and corporate nature) are levied on an individual basis. It is the individual income streams and expenditures of each co-venturer that are taken into account and upon which tax is individually assessed, not the collective income stream and expenditure of the licensees or co-venturers as a whole. This type of regime is found in Australia, the United States, Canada, the United Kingdom, but is not limited exclusively to the developed western democracies. The Congo, Turkey and Bahrain, for example, utilize the system. Of course, the details in each case are not identical (each has its own little quirks) but the general principles are, in each case, common.

The other fiscal regime of general application is that of Production Sharing. At its simplest, this involves the 'contractor' (*i.e.* the licensee) and the host Government (or its national oil company) contracting to share the oil produced. The contractor is responsible for the conduct and cost of all operations but when production is achieved it is shared with Government, the contractor's share being net of all taxes. This regime was originally designed as a means of streamlining both the fiscal and operational aspects of the industry's activities in less developed countries where the bureaucracy and myriad, often ill-defined taxes were less well able to cope with the sophistication and size of the industry, but where the Government wanted a greater say than had previously been allowed it, in the exploitation of its country's resources.

There are as many variations on this general theme of production sharing as there are countries operating the regime (and much of the 'net of

¹ One acknowledgment, however: to James Dallas, Denton Hall, Burgin & Warrens, London for his critical comments.

taxation' wording has been designed less as a result of host country requirements than as a result of U.S. Internal Revenue Service decisions) but, for the purposes of this paper, the following generally common principles are of concern:

- all co-venturers in a project are treated, for all purposes, by Government as a single, jointly and severally liable group called 'contractor'; while in a royalty and tax regime it is common to find the 'licensees' treated by Government for the purposes of the licence as a jointly and severally liable group, in the production sharing regime this single entity concept extends to all aspects of the Government/industry relationship, which is then administered exclusively through the operator;
- the contractor is allowed, subject to depreciation schedules, a certain percentage of current production (say 30–50 per cent) from which to recover his costs (commonly this share of production is known as 'cost oil'); and
- the balance of production (commonly known as 'profit oil') is shared between the contractor and Government, sometimes on a fixed scale but more usually on a sliding scale related to average daily production; say, 40:60 to 5,000 bpd, 30:70 5,000 — 20,000 bpd, 20:80 20,000 — 50,000 bpd and 10:90 above that. The actual figures are not relevant, it is the sliding scale that is of principal significance.

Some countries have a mixture of production sharing and royalty and tax, and the fiscal provisions among production sharing countries can vary significantly, as can those provisions when negotiated at different times in the same country. In some Egyptian contracts, for example, 37.5 per cent of current production is allowed as cost oil — but oil not taken as cost oil accrues solely to the Government, the contractor's share of oil after cost recovery being limited to a sliding scale percentage of the remaining 62.5 per cent. In other countries, oil not taken as cost oil goes into the profit oil pot to be shared between contractor and Government. In Indonesia now, 100 per cent of current production is available for cost recovery, with profit oil being subject to a fixed 40:60 split (or thereabouts) and 'individual' income tax overlaid on the whole. Tanzania has overlaid a 'contractor' based excess rate of return style tax onto a basic production sharing model.

Whatever the regime, royalty and tax, or production sharing, each can cause significant commercial, mathematical and operational difficulties for the application of a 'standard' industry sole risk clause which, if not studied, understood and taken account of, can lead to horrendous, unexpected problems down the line for which management and clients will display little sympathy and less forgiveness. But given that the principal (indeed, only) object of a sole risk clause is to allow the co-venturers to act individually and not as a group, it would seem obvious (and, I believe it to be true) that the production sharing regime causes more structural problems than does the royalty and tax regime. Too often, I have to report, these problems are ignored or at best glossed over with generalities, the detailed effects of which are not thought through. I do not wish to be overly critical;

to my knowledge, no one has solved all the problems of sole risk associated with all production sharing regimes.

I commented above that the current tendency seems to be to merge sole risk and non-consent. This seems to me to have taken this aspect of the operating agreement structure back to that implicit in some of the very oldest operating agreements I have seen. These did not have the overall 'association' concept with which we are familiar. They did, of course, govern the operations of a group of companies in a given area, but they did not have, for example, an operating committee to which proposed operations were brought for approval (or otherwise) as a group operation and incorporated in an annual programme and budget. They worked on the principle that the operator (or any other party for that matter) would merely, from time to time, propose the drilling of a well and the others would elect to be in or out. Those in owned the well and its production — those out got nothing from that well. (It is surprising how many sole risk clauses today still apply this same approach, but with the complication of also having included in the operating agreement provisions for an operating committee, programmes and budgets and Authorities for Expenditure. Indeed it is not unusual to find operating agreements which contain sole risk clauses which are wholly unrelated to the other provisions of the agreement — with predictable, horrible results).

But the important aspect of these 'old' operating agreements (and perhaps the approach is still in use) was that they proceeded on the basis that no co-venturer should be forced to participate in an operation (at least the drilling of a well) against his will; nor should any co-venturer be denied the opportunity to drill his preferred location. And it really did not matter how many wished to proceed and how many wished to stay out. The principle was the same; so should be the rules and the penalties. In these modern days of sophistication and economic analysis, the person who prepared the synopsis for this paper (and to whom I am indebted) was able to insert a heading:

- Reconciliation of joint adventure concepts with independent operations concepts
- flexibility
- investment brake
- deadlock resolution for differing technical opinions
- investment decision deadlock resolution
- resolution for differing risk analyses and rate of return calculations.

A helpful paragraph, and I would be inclined to answer 'yes' to each of the sub-headings as a valid reason for including a sole risk clause. But each is only a gloss on one of the two basic reasons — exploration freedom and resources protection.

This is not to say that all operating agreements contain sole risk clauses — but those that do not are likely to be less effective at promoting harmonious relations within the group than those that do — albeit the provision may never be used. The importance of a sole risk clause simply as a psychological safety valve should not be under-estimated.

To the uninitiated, the basic conflict of individual freedom and joint adventure may seem strange. But the industry spends a lot of time maintaining its independence — witness 'withdrawal', the insistence

(thankfully receding in some areas) of annual programmes and budgets even for multi-year development projects, AFE's to follow budget approval, and casing point elections. For an industry that functions almost exclusively in joint ventures of one form or another, we are mightily loath to give up our freedoms. The large company does not want to be held back by the smaller. The smaller, in bed with a giant, does not want to be bankrupted. That it is often the smaller company that is the more aggressive and that the motivation for sole risk may be the tax position of the proponent, merely serves to underline that no matter what reason you may have for wishing to include the clause, one of your co-venturers will use it for a different reason. As with many operating agreement provisions, you should therefore try to ensure it is fair and reasonable. You never know which side of it you'll be on.

TYPES OF OPERATIONS

Insofar as concerns the types of operations permitted, sole risk clauses lurch from the simplistic (which is often less than sublime) to the ridiculous. At one end of the scale is the clause which deals only with drilling; though usually it will seek to distinguish between exploration and development wells. At the other end are clauses which not only deal with drilling and its derivatives (deepening, plugging back, side-tracking and testing) but distinguish between exploration, appraisal, development and production wells, permit of total sole risk development, allow for sole risk transportation and treatment facilities, work-overs, re-completions and enhanced recovery projects, and, undaunted, have a stab at sole risk geological and geophysical surveys. Indeed, one of the practical difficulties with drafting and negotiating a sole risk clause is, how far do you go? How many different operations (each with its own peculiar problems) do you seek to encompass when drafting an agreement at the outset of an exploration venture which, 9 times out of 10, will be unsuccessful. If, for example, you provide for sole risk project development, do you also allow for sole risk activity (and if so what) within that development?

Before discussing operations that are permitted, we should discuss one which, often, is not. Sole risk clauses generally prohibit the conduct, at sole risk, of any work which is obligatory under the licence. While it is perfectly understandable that no co-venturer should be able to non-consent to such obligatory work, why, in a sole risk situation, this prohibition on the conduct of obligatory work should pertain (and often what it means) I am not sure. If we take the relatively simple case of an exploration well. Licence terms will commonly oblige the licensees to drill at least one exploration well. Less commonly they will define the parameters for that well. Sometimes there will be a depth or target requirement (10,000 feet — post salt/pre salt, for example), sometimes a mix of both. More often than not, the parameters of the well will merely be impliedly governed by the concurrent expenditure obligation or by general words designed to avoid post-holes. Seldom have I seen a licence define a specific target. If there is such certainty, the prohibition is understandable for, at least at the outset, the target is presumably regarded as the main

reason for taking the licence. But, unless there is such certainty in the licence obligation, what does the common prohibition on the sole risk conduct of obligatory work mean? If the licence obligation is simply that a well be drilled, then, while accepting that each clause must be subject to separate interpretation, too often it seems to me that this type of prohibition merely means no sole risk until after the obligatory well (*i.e.* the first well) has been drilled. With multi-well obligation licences, (or, indeed, even single), this might very well frustrate any sole risk drilling.

As to why there should generally be such a prohibition? — perhaps to prevent drilling (and penalty earning) on the group's best location (feasible, if the licence obligation is specific enough, which it seldom is); perhaps to prevent undue acceleration of the work programme (suggesting that the other co-venturers will feel forced to join in). Generally, I would suggest, it is simply a result of defective reasoning. The group reasons that all co-venturers are obliged to fulfil the licence obligations and drill the obligatory well — therefore, the question of sole risking it (as distinct from non-consenting to it, which is prohibited) does not arise. This seems illogical — I cannot conceive that anyone would object to having a partner fulfil the obligation at his sole cost and risk by drilling a location the others did not want to drill.

Quite the most common operation permitted by a sole risk clause is the drilling of a well. The detailed provisions for implementing the clause will vary from case to case, but a normal enough approach would require that the well first have been proposed to the operating committee for approval as a joint operation; that it fail to have been so approved; and that within say 30 days thereafter it be proposed in sufficient detail (as to objective, cost *etc.*) as a sole risk operation. Thereafter, each of the other co-venturers will have, say, 30 days in which to elect to join. The proposing co-venturer and those duly electing to join, will then have the right to drill the well at their sole risk provided they commence the operation within, say, 90 days. The non-participants will suffer a penalty, the benefit of which will accrue to the participants. The operator will be required to conduct the operation provided that, if he is not a participant, he may decline for good and sufficient reason, in which case one of the sole risk participants will do so.

As noted above, even the most simplistic sole risk clauses seldom fail to distinguish between the drilling of exploration wells and development wells (even if they do not permit the latter) — and this suggests the need, at the outset, for a definition of an exploration well. (I have encountered the odd operating agreement that eschewed a definition, presumably leaving the matter to 'the good sense of the parties at the time' — those who have had experience with the good sense of their colleagues from time to time will, I'm sure, agree with me on the need for a definition).

Now, everyone knows the difference between an exploration well and a development well — the first seeks to discover oil no one knows (for sure) is there; the second to produce that oil. It is common onshore, and possible offshore, for an exploration well to be used as a producer — but that is not at this point relevant; we are concerned with categorizing the well at the time of spudding.

However, oil is found in discrete reservoirs — in porous/permeable rock, trapped against non-porous/impermeable rock as it migrated along the path of least resistance from its source with, usually, a gas cap on top and water below. The definitional problem is to identify the extent of a particular reservoir (including the oil/water contact) because, if a well has previously been drilled into and ‘discovered’ oil (the usual test is one of recovered at the surface), then a subsequent well into that reservoir cannot be regarded as an exploration well — the oil has already been discovered.

At least initially, the only way to ‘map’ a reservoir is by interpretation of geophysical and geological data — but data interpretation, even assuming the quality of the data is good, is, at best, an imperfect science. And in virgin country, with little or no well control (*i.e.* data obtained from previous wells), the task is even more difficult. The true configuration of a reservoir may only be known some time after production commences and as reservoir pressures are monitored. But reservoir pressures alone can be misleading because two separate accumulations of oil may be separated by water, thus resulting in pressure communication but not ‘through the hydrocarbon phase’. Indeed, the true configuration of a reservoir may never be known. There are reservoirs which have produced several times more oil than can possibly be held within their mapped boundaries — and are still producing.

Commercially, much may hinge on whether a proposed sole risk operation involves the drilling of an exploration well or otherwise — at the least, the sole risk penalties will be significantly different to account for the differing risk. Many sole risk clauses add a third category of appraisal well — drilled ‘to determine the extent of a discovery’, to which different rules and penalties again apply. But still we need a definition of exploration well to start the ball rolling.

Some clauses seek to avoid the problem by merely providing that any well further than x kilometres from any other is an exploration well — within the circle, and it must be a development (or appraisal) well. But to be anywhere near fair and reasonable, it seems to me that the x has to be based on some idea of the likely size and configuration of structures in the area — and, in the early stages of exploration in an area with little or no work done, and when the clause will be being negotiated, such information will be noticeably lacking.

So the more ‘sophisticated’ draftsman provides that the extent of a reservoir (and hence the classification of a well) will be determined on the basis of the latest data and information at the time of spudding — the problem with this is that interpretations of that data and information will often vary (often very significantly) between the co-venturers, and within a co-venturer. The ‘judge’ might say that the proper way to handle the problem is to make the determination when all the facts are in — but they may never be in and, in any event, the industry requires to know the rules before investing.

My current experience is that, more often than not, the ‘latest data and information’ test is the one used *i.e.* an exploration well is one which is not drilled into a geologic feature or stratigraphic trap into which a well has

previously been drilled and tested oil at the surface, the extent of the geological feature or stratigraphic trap being determined on the basis of the latest data and information available to the co-venturers. It follows from this that an appraisal well is one drilled into such a feature or trap 'to determine the extent of a discovery' and that a development well is also one drilled into such a feature or trap but this time 'to produce the oil'. At least all this has the merit of attempting accuracy. Note, however, that mapping is a three dimensional activity, and the treatment of the well insofar as it penetrates formations above and below the reservoir needs attention. Generally, formations below that of the reservoir remain available for an exploration well — younger formations sometimes do, sometimes do not. A well can, in fact, have more than one characterization in some clauses. With the above approach to definition, the drilling derivatives (deepening, plugging back, side-tracking and testing) follow the same rules, with categorization of the operation as exploration, appraisal or development being determined at the time the particular operation commences and by reference to its objective.

Once categorized however, the sole risk drilling of a development well raises a new set of problems. Many sole risk clauses still admit of the possibility of 'one off' sole risk development well drilling. That is, the same rules and, at least in principle, penalties apply as for sole risk drilling of exploration wells. A development well is proposed for approval as a joint operation; not so approved and can then be drilled sole risk. Increasingly, I would suggest, such an approach is inappropriate. It seldom seemed appropriate offshore because of the scale of investment and planning needed for development and now, with increasing Government involvement in all developments, and financing requirements, I would generally extend this judgment to the onshore, except in exceptional circumstances. This is not to suggest that there is no room for some development related sole risk operations — transportation and treatment facilities could be (and are) beneficially accommodated in some projects, (although without penalty), as are the possibilities of sole risk work-overs, recompletions and (to a lesser extent) enhanced recovery. But for the basic development itself, increasingly the industry is being forced by circumstances to abandon its cherished freedom of action — the only freedom being to elect in or out of an overall development scheme at the outset. Thereafter, the majority governs without, in most cases, the availability of withdrawal (at least until the capital investment is completed).

Strangely enough, having now got all the way to development and production, the one operation which the industry has not, generally, been successful at permitting at sole risk, is the geophysical survey (or for that matter any other survey). In those agreements which maintained the distinction between non-consent and sole risk, such surveys were commonly specifically excluded from the non-consent provision (*i.e.* the majority vote bound all to participate) and were not permitted (by omission) under the sole risk clause. The principal reason, so far as I can gather, is the inability to construct a reasonable, enforceable penalty in reasonable circumstances. The principle of the sole risk penalty is usually

(although not always) that it is payable if the sole risk operation is successful *i.e.* in the exploration context, that it discovers or confirms oil. In the oil-man's parlance that oil has only been discovered when it is recovered at the surface, a geophysical survey cannot discover oil — only a well can do that. If you doubt me, try to get into a unitization without having drilled the common structure on your side of the boundary, whatever your maps may show. The difficulty with a seismic survey is how to determine if it, and if so how much of it, has significantly contributed to a discovery (and to which discovery). Attempts are from time to time made at constructing penalties — *e.g.* 200 per cent voluntary buy back before drilling; 500 per cent compulsory buy back before participating in a subsequent well within the (mostly arbitrarily defined) area of the survey — none totally successful. The banning of non-consent to an approved survey because of the difficulties of penalty construction is understandable and justifiable. But why 'pure' sole risk geophysical surveys should not be permitted as of right just because of the penalty construction problems I do not understand. After all, no one would be forced to conduct it at sole risk. And I've always been told that sole risk operations are not undertaken for the sake of earning a penalty — but to further exploration. Perhaps, like the ban on the conduct of obligatory work at sole risk, this aspect is often not thought through well enough.

PENALTIES

Sole risk penalties (which are enjoyed by the participants in a sole risk operation at the expense of the non-participants) generally come in three basic forms. The first is the classic production penalty where the sole risk participants are entitled to recover, as a first call, *vis-à-vis* the non-participants, on production discovered, appraised or developed by the sole risk operation, a multiple of the extra costs of the sole risk project borne by them. Commonly at the moment, sole risk exploration well penalties seem to be running around 1200–1500 per cent of what would have been the non-participants' share of the costs had they participated; appraisal well penalties around 800 per cent and development well penalties around 300–500 per cent — and commonly the penalties are recoverable from the reservoir discovered, appraised or developed, not just from the well concerned. Thereafter, the non-participants have the option (and they should not have the obligation because that might leave them with little more than a share of the abandonment costs of the development) to participate in future production.

But a simplistic statement such as the foregoing hides a number of complications. The exploration well penalty is relatively complication free, the major problem being to pitch the penalty at such a level as will not make it attractive to stand out of the operation (*i.e.* it will be a 'penalty' but at the same time will not, in effect, amount to a complete takeout. More awkward are the problems of appraisal and development well penalties. An appraisal well cannot, as noted above, 'discover' oil — but it can enhance the reservoir by proving up additional reserves; or it can achieve the opposite, by defining smaller limits than had otherwise been

anticipated. Either is a valuable contribution to the group for which some compensation is justifiable. But judging the value of that contribution and the circumstances in which it should be paid is difficult. In some areas, the problem has been attacked at the front end by limiting the circumstances in which a sole risk appraisal well can be drilled, and then letting the consequences of the drilling (whether it proves additional reserves or otherwise) follow automatically. Usually in such a case, sole risk appraisal drilling will not be permitted until the group's appraisal programme has been completed (or the group has decided not to appraise or conduct further appraisal) and, additionally, will not be permitted if the group has decided to develop the reservoir concerned (or a sole risk development is proposed). If the sole risk appraisal well is drilled then, irrespective of the result thereof, the penalty will be allowed if the reservoir is developed. If, as a result of the sole risk appraisal well, a mooted development does not proceed, the sole risk participant will, in such circumstances, have to content himself with his share of the group's (good?) fortune.

Two further points about production penalties. While recovery of the penalty out of production only from the well concerned may be appropriate in the case of work-overs and recompletions, (where the sole object of the operation is to enhance the productivity of the particular well), such a limitation is not appropriate to drilling generally. It might be, if the well produced — which it might very well not do if it is offshore, depending on whether it can be re-entered or where the production facilities are; and may not do onshore for any number of reasons, including mechanical failure.

Money has been made by non-participants from clauses limiting penalty recovery to production from the well. The penalty should be recoverable out of production from the reservoir or pool — some agreements say 'field' but beyond knowing that a field is one or a group of pools, I know of no generally applicable definition of 'field' that is precise enough for these purposes.

Secondly, no sole risk participant should be entitled to the penalty unless he participates in the subsequent development.

As I commented above, individual sole risk development well drilling seems to me to be less and less appropriate in this day and age, though there are those who disagree, and I would not always disagree with them. But one should be careful before allowing it, because all the sole risk participant will be doing is draining the group's reservoir and possibly playing havoc with the group's development scheme. More frequently, the total loss of rights to production from the reservoirs concerned is the penalty applied for non-participation in the development scheme for those reservoirs.

The second form of penalty is cash. Here, the non-participant pays a multiple of what would have been his share of the costs of the sole risk operation, in cash, to the sole risk participants prior to participating in any further operations in respect of the reservoir concerned. Because of the up front cash nature of the penalty, the multiple is considerably less than the production penalty multiple and, because it is up front and in cash, the industry tends to avoid it. However, some jurisdictions, because of the peculiarities of their tax laws, mandate this approach.

Inevitably some agreements provide for a mix of cash and production penalty.

The third form of penalty is the acreage penalty, and it can principally take two forms. The first is similar to the penalty suffered for non-participation in a development plan — loss of all production from the reservoir concerned, but applied at the sole risk exploration drilling stage. The second is loss of rights to a defined area (at least to the depth or age of formation penetrated by the sole risk well) and irrespective of the success or failure of that sole risk well.

I have commented above on the penalty construction difficulties of sole risk geophysical surveys. The drilling derivatives (deepening, side-tracking, plugging back and testing) can also provide their own difficulties of construction, although deepening, side-tracking and plugging back tend to follow the penalty which is applicable to drilling (but with depth limitations), while testing (often, strangely enough, omitted by oversight from many clauses) tends to attract a multiple of costs penalty, irrespective of the penalty applicable to the type of well tested.

SOME COMMERCIAL CONSIDERATIONS

While the approaches to penalties are fairly common world-wide, each jurisdiction needs to be examined with a view to peculiarities the legal and tax regime may throw up, whether it be the liability of the penalty payment to tax (income, profit or capital gains) in the hands of the sole risk participants, or the attitude of the regulatory authority to the changes of ownership inherent in the varying rights to oil among the licensees within the licence. But there is one set of peculiarities thrown up by the production sharing regimes that bears special attention.

As noted above, the world is broadly divided into two types of oil industry regimes — royalty and individual tax, and production sharing. Some countries have a mixture. Unfortunately, sole risk as a concept was born and developed in 'simple' royalty and individual tax regimes, and its export to the supposedly simpler but, in sole risk terms, more complex, production sharing regimes has not been wholly successful.

As we have seen, in a royalty and individual tax regime the licensees are jointly responsible for payment (or delivery) of royalty (commonly say 10 per cent), but individually responsible for (and assessed to) income, corporation and other like forms of tax. In a 'pure' production sharing regime, no tax is payable but the oil is shared between the Government on the one hand and the 'contractor' on the other — first, a certain percentage of current production (say between 30 per cent and 50 per cent) is allocated to the 'contractor' as cost recovery oil *i.e.* subject to amortization schedules, the 'contractor' takes so much of the 30 per cent to 50 per cent as is necessary to allow him to recover his costs, carrying forward any not recovered to the next year. The balance of the production is then split, as 'profit oil', between the Government and the contractor, usually on a sliding scale dependent on total production.

Now, in a royalty and individual tax regime, cost recovery would be handled by individual tax deductions against individual income and the

tax element of the profit oil split, handled by individual tax on individual net profits. The problem in the production sharing regime, from a sole risk viewpoint, is that the system is being applied, not to the individual co-venturers but to the 'contractor' (*i.e.* the co-venturers as a group). The Government or national oil company has little concern with how the group divides 'contractor's' spoils among itself.

Commonly, the principle of production allocation within a group is: Cost oil, *pro rata* to costs incurred: profit oil, *pro rata* to participating interests. But if one co-venturer has incurred (let us say, unsuccessful) sole risk expenditure, his recovery of that expenditure from the cost oil pool would, if this principle were applied, either delay cost recovery by the other co-venturers (if joint and sole risk expenditures are pooled and recovered contemporaneously), because his share of costs incurred will be greater than his participating interest share of the expenditures pool, or will eat into the other co-venturers profit oil share (if sole risk expenditure recovery is delayed until after joint expenditure recovery) because, for every barrel of cost oil recovered by the sole risk co-venturer against his sole risk expenditure, there will be one less barrel of profit oil.

Regrettably, the complications do not vanish if the sole risk operation is successful. Certainly there will now be more oil, which may ease the cost recovery problem in one sense. But the fact that, while the 'contractor' will, *vis-à-vis* the Government, be entitled to recover all costs applicable to the contract area from the sole risk production, some of the co-venturers who have incurred these costs will not be entitled to recover them *vis-à-vis* the other co-venturers because they were not entitled to participate in the production — can lead to a whole raft of new problems.

Further, production of that 'sole risk' oil may push the 'contractor' into a new profit oil split category *i.e.* up from 40:60 to 30:70, which will impact on sole risk and non-sole risk production alike. The effect of this on the different developments, which will undoubtedly have different economics, will be immense.

There are various ways these problems are sought to be handled in sole risk clauses. One is simply to say that joint expenditure recovery and joint production accruing to the co-venturers shall not be prejudiced by sole risk operations, whether successful or unsuccessful, and that no party can recover another party's costs. The first of these can work great hardship on the sole risk co-venturer, particularly if it is a later joint production that causes the new profit oil split and, of course, helps not at all in balancing out the relationships between different sole risk operations. The second can have the effect of denying the group oil to which it is entitled *vis-à-vis* the Government, oil which might, depending on the terms of the production sharing contract, be lost to the group forever if not claimed when claimable.

Another way of handling these problems is to provide that all oil (cost oil and profit oil) will be split in participating interest shares, irrespective of expenditure shares, and subject only to the sole risk co-venturer being entitled to his production penalty in the normal way. This approach is advocated on the grounds that all co-venturers start at zero,

have an equal right to participate in all operations and subsequent production and can assess the likely consequences before making decisions (one of which is that the non-participants in a sole risk operation will get a share of the cost oil attributable to the expenditures on that sole risk operation, particularly if it is unsuccessful) — and that to attempt to do anything else is much too complicated. I must say that the approach appeals to me, though it is likely to cause problems (which may not be anticipated at the time) if all co-venturers do not start at zero (*e.g.* a 2 for 1 farmee will be prejudiced if he does not adjust his offer to take account of this approach).

It is not only, however, the production sharing regimes that have done damage to the 'traditional' approach to sole risk. The royalty and tax regimes do their little bit from time to time. It occurs to me that the differential royalty provision in Australia between 5 and +5 block production licences would cause similar problems were there joint and sole risk production within the location. In the United Kingdom the Petroleum Revenue Tax provisions have mandated cash penalties rather than penalties out of production. And so, I am sure, it goes on.

ACCOUNTING, OPERATIONAL AND LEGAL ASPECTS

From the accounting and operational aspects, the implementation of a sole risk operation looks as though it should be relatively straight forward — and perhaps in some cases it will be, if the group's operator is to conduct the operation. But, if he is not, the practical problems should not be overlooked, albeit that at the time the clause is being negotiated there will perhaps be little that can be done about them.

Two sets of books will have to be maintained, two offices established, two operators recognized by Government (which, in many countries, is not contemplated by the licence terms). Their operations and responsibilities co-ordinated, *vis-à-vis* Government, the group and themselves. With the two sets of overheads being charged against the licence, something which, in a production sharing regime, can lead to significant problems with Government and the group's operator because the terms of the production sharing contract will often specify the maximum amount (usually a percentage of the expenditure incurred by the 'contractor') which can be so charged.

The following of the procedures laid down in the clause is crucial — for if a discovery is made, you can be assured that the non-participants will see if their lawyers can get them back in for free. And these procedures, which are often highly technical, may have to be implemented in as little as 72 hours without legal advice on hand. If the sole risk participants wish to use some items of the group's equipment and services (which commonly they will, by the terms of the sole risk clause, be permitted to do, but which will have been contracted by the group's operator and not always consistently either as principal or as agent for the group), there will be significant contractual and insurance problems to be overcome.

And the setting up of an operation in a remote area of a less developed country is, in itself, a time consuming, difficult and complex task.

Two matters which can be 'solved' by the clause, but often are not, are default and renewal/relinquishment. A group confronted with a sole risk operation may, for the first time, find itself with two operators, two sets of books and two cash calls a month — and will be faced with the possibility that one of its number may default on one cash call from one operator, or in respect of one operation, but not on the other. The interplay of the sole risk indemnity, default and forfeiture clauses therefore needs to be carefully looked at, as the interests of all the non-defaulting parties will not be identical.

The impact of and on the withdrawal clause also needs consideration. Similarly, when it comes to renewal/relinquishment of the licence, the interests of all the co-venturers will now not be the same. Whereas prior to the sole risk operation, the co-venturers might have expected to have disagreements regarding the area to be relinquished and perhaps the terms of the renewal, they will now have differing commercial interests in differing parts of the licence (often with depth limitations). This state of affairs might add some spice to the predictable disagreements unless some fair and reasonable rules have been formulated in advance.

CONCLUSION

Sole risk can be fun. It can be even more fun (if that's the word) if less than sufficient thought has been given to the clause in its intended environment at the outset. Each clause should be subjected to a full dry-run before it is finally signed off, so that, if nothing else, the holes and deficiencies are appreciated up front and the group enters with its eyes open. A friend of mine subjected a sole risk clause in one of his operating agreements (not drafted by him) to such a test, and was encouraged by the results. But there are a lot of permutations and combinations in a sole risk clause — and, sometime later, his management, encouraged by the progress of a well (it was running high and looking good) wanted to sole risk the deepening thereof. To the clause went my friend — it worked just fine — just so long as he gave notice of his wish to deepen before the well was spudded. But then the single biggest impediment to a sole risk operation can often be the sole risk clause itself.