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**German claiming practice and principles against international practices
using examples from the field of dredging industry**

Rules for payment adjustments in German construction law context (VOB/B, BGB)

Different principles of payment:

Payment of (contractual) rates (“Vergütung”)

Payment of cost (“tatsächliche Mehrkosten”)

Damages (“Schadenersatz”)

Fair compensation (“angemessene Entschädigung”)

Main extracts from system of adjustment for **contractual rates**: §2 VOB/B:

§2.3 Change in quantities more +/-10%
>10%: New price for extra increment
<10%: New price for realized quantity
(Mehr/Minderungen)

§2.5 Variation order
SCL: Core statement
15 – pre-agree fixed price for total likely effect
Änderung des Bauentwurfs
("Anordnung")

§2.6 Additional work
Zusätzliche Arbeit
("vertraglich nicht vorgesehen")

§2.8 working without contract (quantum meruit)
Geschäftsführung ohne Auftrag -> notwendig, mutmaßlicher Wille, unverz. Anzeige

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Domestic Examples: Dredge & dump, price per m³, BoQ contract

Contractual scope: 1.000.000m³

Estimated: 100.000 m³/wk, 10 Euro/m³ selling price

Available info: Base estimate at moment of contract formation (“Urkalkulation”), Composition of tender sum (“Schlußblatt”, breakdown of tender sum in salary cost, materials, equipment, other cost (“EKT”) and mark-ups for profit and risk as well as for overheads (on- and off site).

Advantages (if properly prepared): Contractor document available which is not “infected” by economical driven policies coming up through changes whilst executing of the works; clear breakdown of cost components available (cost types, cost definition, mark-ups).

VOB §2.3:

Change in quantity >10%: As from 1.100.000 new price for extra m³.

VOB: Reduction of price for additional m³ above executed 1.1 mio m³ to prevent over recovery of l.s. items in price resp. overheads.

Change in quantity <10%: say total executed 800.000m³

For all executed m³ new price, reckoning with shortcoming in contracted profits and overheads. If all mark-ups strictly dependent on the revenues then new price will be $EP_{\text{new}} = EP_{\text{old}} / (1 - (1000 - 800) / 1000)$

in above example.

SCL does not recommend generally applicable price adjustment mechanism.

VOB §2.5 and §2.6:

Dredge different area, different face heights, constraints in working time, working close to others)

Standard VOB solution will be to develop consequences on the output (“production”) as well as for the cost. Reduced output can be seen as disruption (hindrance or interruption to Contractor’s normal working methods, resulting in lower efficiency). New price to be calculated based on base estimate (“Fortschreibung der Wettbewerbspreise”).

Important: find the causal links for I) why there is a §2.5 / §2.6 situation (“haftungsbegründende Kausalität”) and II) what is the financial implication of this (“haftungsausfüllende Kausalität”). The latter is consequent use of the original estimate as base for new rates resp. to establish new productions in line with tender estimate (see below).

	Estimate (Urkalk.)	Realised	Difference
	(m3/wk)	(m3/wk)	(%)
Contract:	100.000	80.000	20
Disruption:	75.000	60.000	20
Claim:	62.500	50.000	20
Total:		50.000 (known number)	

Alternatively calculate above in values hr/m3 -> easier cumulative approach.

VOB §2.8: Evaluated similar like §2.5.

SCL law context: comparable with quantum meruit (“what it is worth”).

German cost systematic in construction estimates:

EKT = All cost tied directly to defined BoQ items

+BGK = Site overheads

= HK (cost of producing the works)

+AGK (headoffice overheads, mostly percentage of revenues)

= SK (own cost)

+Profit (mostly percentage of revenues)

= Tender sum

EKT
+
BGK
+
AGK
+ Profit

EKT normally subdivided in (a.o.) salaries, equipment, others -> cross check for average salaries, average equipment cost/time possible based on tender estimate end sheet („Schlußblatt“).

Reduced efficiency through delay & disruption or variations lead to changed EKT.

This change shall be estimated ex ante based on original estimate, writing forth the over- or underestimates of production rates and cost rates.

Norm: Good price remains good price, poor price remains poor price.

In Germany experienced dredging Contractors will always present a plausible dredging production rate in their estimate too. Main contents should be production per net hour, net hours/week and gross/net ratio of paid volumes. If these numbers are logic and correctly estimated then the consequences of delay and disruption, change or others can be reasonably accurate reassessed.

Relevant parameters for price forming: $\frac{m^3}{net\ hr} * \frac{net\ hr}{week} * \frac{paid\ volume}{gross\ volume} = \frac{m^3}{week}$

The higher the degree of detail the better the chances of pinpointing the outcomes of change or disruption to specific parts of the production part.

Internationally: Tendency to keep economic information and technical information close to oneself. Reason a.o. confidentiality. However it's up to Contractor to make his fully backed up claim if he wishes to receive extra payment.

In how far constitutes the SCL D&D protocol
best practice (Germany / Internationally) ?

- SCL: Objective is to give general guidelines for contract parties to administer times and resources spent in construction contracts to avoid unnecessary disputes. No direct recipe for estimation of new rates as in VOB.
- Advice regarding variations: Calculate direct cost (labour, plant, materials) and time related cost, establish EOT, make up new revision of programme.
- Normally Clients do not have the relevant numbers from contract award date. Thus often there is a general mistrust that Contractors may misuse their privileged knowledge about operations on site to manipulate claim calculations, based on changes or d&d already occurred in their favour. This is a principle issue and may only be tackled by introduction of a document like the original estimate eg with an advocate well in advance of the works.
- In general make sure that you as a Client have a variety of working rates for plant and personnel to evaluate changes to the works to at least check claims upfront on plausibility and be able to develop a fair and reasonable price independently. This is specifically important in d&b contracting.

2.) Payment of cost

In a VOB context Contractor is entitled to payment of cost under §4.1.4: Client gives unpractical or unnecessary order and hence has to bear to additional cost. In German legal view this would mean based on (proven) real cost. To be supplied: - proof of worked hours, consumptions, machinery employed, materials purchased, site overheads, headoffice overheads based on reasonable proof (either as proof on balance of probabilities estimate, otherwise documents from internal accountancy of company).

There is thus space for discussion under VOB regime on whether an order constitutes a change order (payment of new rates derived from original estimate) or an unpractical order (payment of cost only).

Using the German systematic the main difference with payment of rates will be in (non-)payment of profit margins which would have been due conform original estimate.

Noteworthy:

SCL: English approach thinks in apportionment of risk. If an event out of the risk sphere of one party manifests itself then this party has to bear the resulting cost. "Cost" in this respect is the amount directly linked to the risk event being responsibility of Client and not being profit.

SCL clearly states limited relevance of tender allowances for evaluation of costs of prolongation and disruption caused by breach of contract or other causes which require evaluation of additional costs.

Example: No site overheads in tender, works pro-longed by breach of contract. Extra time for site overheads required. Cost for the said resources is permissible cost claim conform SCL.

To establish loss and expense Contractor must deliver:

- as-planned programme (incl. critical path)
- as-built programme incl. critical path
- activities and times which are not part of original scope
- activities and times which are Contractors risk

Core statement 16: ...compensation for prolongation should not be paid for anything other than work actually done, time actually taken ...

This mirrors nicely the philosophy of SCL, paying the Contractor its actual cost rather than (changed) commercial rates.

In case of claiming cost the Contractor shall not be put into a better position than he would have been in had the contract been executed as planned.

3. Damages

In VOB context damage payments occurs when a Contractor feels himself hindered or interrupted in the execution of the works. §6.1 rules the obligation to give notice to the Client in this matter whereas §6.6 quantifies that the occurred damage will be reimbursed by Client if he was responsible for the hindering event, however profit only in case of willful conduct by client.

To quantify the damage it is always practical to assess the situation without hindering events (what would have been the situation of the contractor would there have been no hindrance) and compare it with the hindered situation. The delta should be the real damage (if no concurrency occurs).

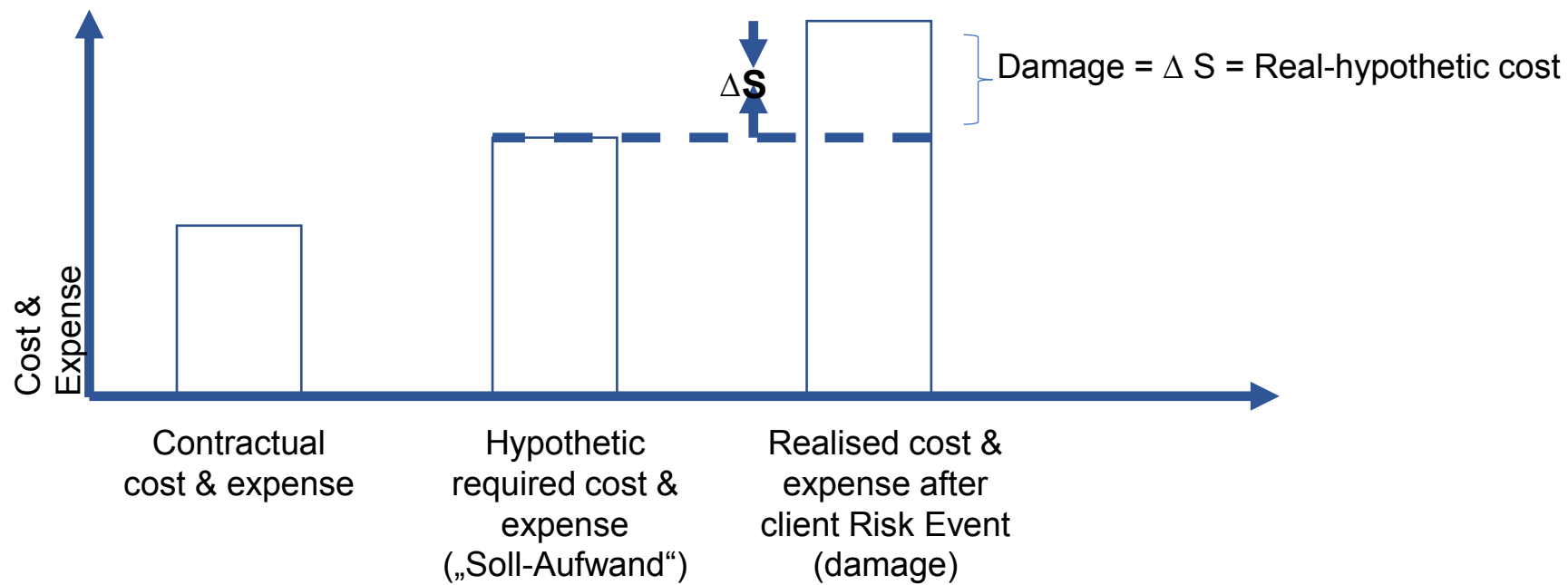
Note: In case of concurrent delay there will be no reimbursement of cost for Contractor for the part of his damage he would have had encountered anyhow ("Sowiesokosten").

It is important to make sure Contractor does not become disproportional better from being hindered by Client. In case Contractor estimated properly than the mentioned delta should be close to payment of cost as due under 2.)

Comparing English and German approach one sees that where VOB usually aims to settle changes by adjusting prices in contract or forming new prices the "normal" English approach is to rather claim for damages (=cost or loss and expense) occurred due to the changes in scope, work method etc.

The challenge is thus to establish what is the damage to start with and what part of this damage is to apportion towards Client and what towards Contractor. Last but not least how to prove sufficiently specific the quantity of damage. As a help German law uses the hypothetic economic situation of the damaged party without hindering event and compares this with her new economic situation. The delta is the damage.

Financial situation with and without damage



To which extent is it reasonable to expect Contractor to present in detail cause and effect of d&d, variations and changes? When could a global claim approach be considered?

Consider

- cost of analyzing and presenting the claim (normally not a permissible head of claim for Contractor)
- financial consequences of various causes of compensation impossible to distinguish

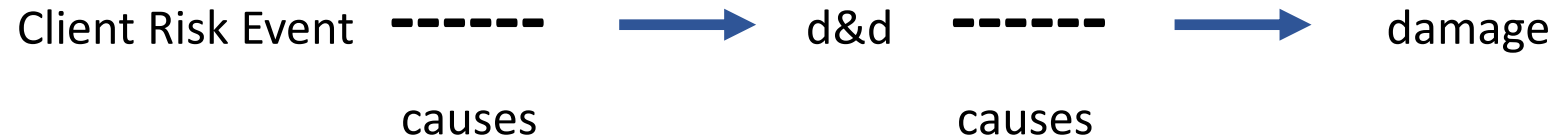
Example: several hoppers from different owners, no (tender) cost info available, vessels hindering themselves in multiple ways (changing dredging location, spoiling dredging area with resedimentation, combined with different working regimes due to environmental restrictions,...)

- Isolate whatever claim cause can be isolated from the rest and only take the remainder as global claim

SCL: Core principle 12: Arbitrator should put himself so far as is practical in position of the CA at the time the Employer Risk occurred. In hindsight it's always easy to see potential for more efficient operations.

However: Minimise loss and do not take unreasonable steps to increase loss (Duties of Contractor)

Issue: Cumulative impact claims. Multiple changes, reduced productivity. Causation? Quantification?



Total cost method :

Realised cost – estimated planned cost

Modified total cost method:

Total cost above – acknowledged cost Contractors responsibility

Measured mile:

Take production as realized in undisturbed circumstances and compare to d&d production

SCL: 1.19.8 „...Comparison of productivity on other contracts executed by the Contractor may be an acceptable alternative,...”

4. **Fair compensation:** Has a similar character as payment of rates (“vergütungsähnlich”). Is useful when e.g. notifications required under §6.1 have not been written. Legally this entitlement to payment derives from BGB642, thus it is a remedy under German civil law.

In English law context this compares to a fair and reasonable payment which would be due e.g. for works under quantum meruit or in cases where the parties cannot agree on the price for a variation and the CA or an arbitrator finally will decide the remuneration.

SCL d&d protocol is not a contract document, neither is it the holy grail of construction law and quantity surveying. To a large part it is common sense, trying to do the following:

- Balanced interest of all parties
- Start works with accepted programme and update accordingly (EOT, actual progress)
- Interest in EOT: Prevent LD's (Contractor), time for completion not at large (Client)
- Incremental granting EOT (only on foreseeable effects, repetitive) -> discipline!
- Stimulate early and complete evaluation of change and variation
- Concurrent delay: Does not prohibit EOT but prevents cost reimbursement (anyhow cost)
- Duty to mitigate effects of d&d: minimize loss, not unreasonable increase cost

Valuation issues:

- Variations should be valued based on direct cost, time related cost, EOT and programme
- For similar works contract rates should be used to arrive at new price
- Not similar works can be used and adjusted
- Dissimilar works: Use of reasonable or fair rates, which means estimation of reasonable direct cost plus reasonable allowance for overheads and profit
- In general: Discourage global claims. As a general rule the link of cause and effect must be established for each event a Contractor claims monies for.
- Compensation for prolongation: Actual additional cost incurred by Contractor -> same financial position he would have been in but for the Employer Risk Event.
- Compensation in general depends on the terms of contract (variations, breach, unforeseen ground conditions,...)
- But Contractor always has to demonstrate that he actually suffered a loss
- Possibly agree on day rate payment per day of prolongation (like inverse LD's)

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Best practice in industry:

What is cost? Definition: “...valued use of goods and services in order to produce a product...”

In the dredging industry the cost of the works is normally derived from the main equipment plus auxiliary and supervision/survey plus mark-ups:

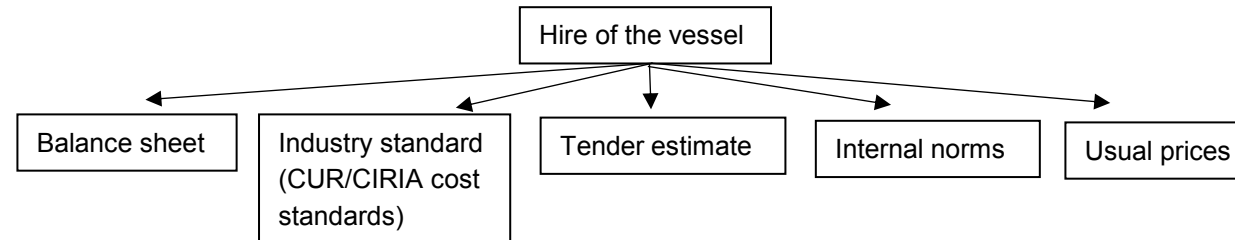
Direct cost is mainly operating cost of dredger and auxiliary equipment (e.g. assistance vessels, sandfill etc.):

- Hire component
- Repair fix
- Insurance
- Repair variable
- lubricants
- fuel
- salaries (NL, expat, Phil.,...)
- wear and tear
- food
- travel
- consumables
- Harbour cost
- pilots
- ...



Try to define Contractors cost upfront.

Hire component:



Dependent on which philosophy one follows the results of “cost” established will be very much varying:

CUR/CIRIA: Bookwork of values, based on installed power and weight of vessel. Transparent and accepted in industry.

Tender: dependent on economic situation company, competition, risk hunger

Internal norms: Only calculatory cost

Balance sheet: How to deal with written off dredgers?

Usual prices: What is a usual price? Can client cherry pick with prices from 3rd parties?

Recommendation from SCL (and eg FIDIC): Make sure Client has a variety of rates available to deal with changed works. Start a cost philosophic discussion like above in the middle of a quarrel does not help solving the dispute.

Wear and tear:

This is a calculatory cost which is taken into account at tender date to allow for the wear and tear of sand-flushed parts of the vessel. The exact amounts are unknown at time of the tender and are only known in detail once the pipes / parts are removed and one knows how much projects with how many cubic meters of which soil type have been handled by the system and hence the cost can be apportioned retrospectively.

Variation / Disruption: Higher content coarse material. Consequence: Lower production for various reasons but also higher cost (fuel, wear and tear). Cost w&t can only be approximated (extra loss of wall thickness, cracks, extra cost for site repairs).

Practice in industry: - Have in-survey available (reasonable up to date)

- conduct out survey
- specify cost component in tender price (In Germany: Euro/m³ stated apart in original estimate)
- explain increment in w&t allowance based on industry nomograms and cost actually made

SCL protocol requires specific breakdown of direct cost, however “cost” can mean different things.

Overhead cost:

Site overheads are items like the site office, project management, surveyors. These cost components are normally transparent and relatively easy to prove. Possible issue: Salary cost -> one norm rate for junior / senior personnel rather than prove of single working contracts!

Headquarter overhead is all company cost situated off the sites and not directly absorbed by specific sites. This cost is normally recovered pro rata by all sites based on turnover percentage. In normal years (no unusual fluctuation in personnel, no large investments in new headoffice facilities) it should be a more or less stable yearly sum. Thus constant yearly turnover for the company would mean stable headoffice percentage on the contracts.

German approach: Normally head office overhead are for quantification directly related to the turnover. No turnover, no headoffice overheads.

There is no direct relation between execution time and headoffice overheads. In so far a prolongation of works alone does not entitle Contractor to compensation for headoffice overheads, there needs to be a revenue component involved (eg idle cost for personnel and equipment not being able to work elsewhere). This makes estimation of headoffice overheads comparable easy.

SCL protocol (in line with English legislation) emphasizes the need to establish real cost in damage claim, also for headoffice overheads.

Hence

- wherever possible specify overheads clearly to a Employer Risk Event (link cause – effect)
- Where Contractor claims unabsorbed headoffice overheads demonstrate that he failed to recover overheads it could reasonably have expected during period of prolongation
- Where Contractor has not been able to recover said overheads he shall demonstrate that this was because its resources had been tied up by Employer Risk Events.

As a help one may use formulae to establish unabsorbed headoffice overheads (preferred Emden or Eichleay). Emden formula:

$$\frac{\text{Headoffice OH Percentage}}{100} * \frac{\text{contract sum}}{\text{contract period}} * \textit{period of delay}$$

Advantage: Headoffice OH percentage derived from audited accounts.

Alternatively tender allowance for head office may be used if that's what the party wish to do.