

# Claims under FIDIC

## التغييرات (1) Variations (Part I)

Lecture # 3

Justice Academy

Author-presenter: Tahseen Saleh

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International Federation of Consulting Engineers

Tahseen Saleh

# Variations

Managing variations is one of the Engineer's key roles where mismanagement may lead to claims and disputes.

## Outline

1. Variations - General
2. Variation of the Contract
3. Variations Under the Contract
  1. Right to Vary
  2. Timing of Variations
  3. Initiation and Instruction of Variation
  4. Value Engineering
  5. Valuation of Variations
  6. Errors in rates
  7. Using daywork rates
  8. Provisional rates
  9. Sequence and Timing

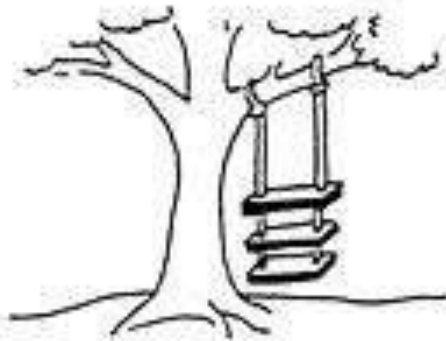
## 1- Variations – General

- In any construction project there will be a need to change the initial requirements as the construction proceeds on the site.
- Very few contracts run their course without the need to introduce **Variations**, making changes to the form or nature of the Works as compared to what was foreseen at the time the Contract came into force.

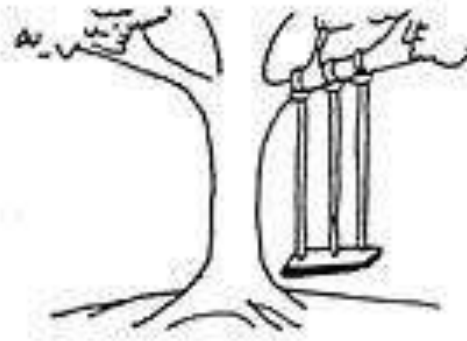
# 1- Variations – General

- Complying with **Variation procedures** and maintaining a cooperative approach to the determination of Variations should enhance the likelihood of achieving a successful project.

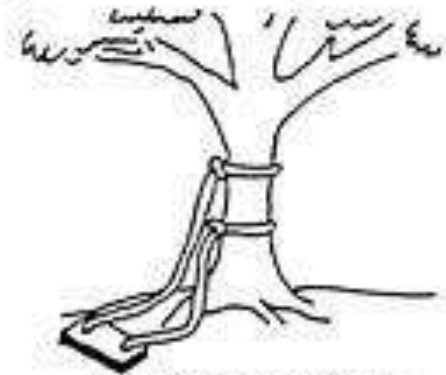
**“Problem solving is an art form not fully appreciated by some”**



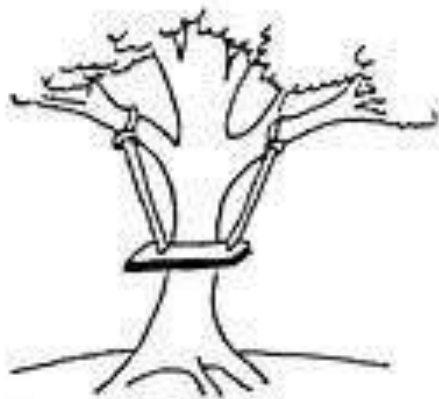
*As proposed by the project sponsors*



*As specified in the project request*



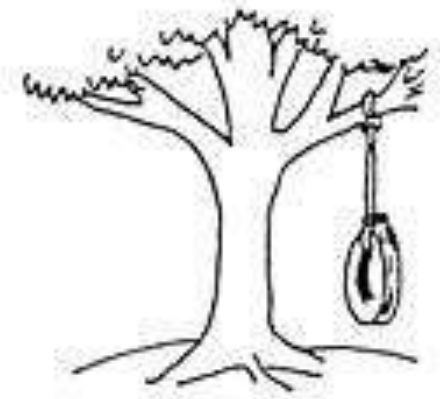
*As designed by the senior analyst*



*As produced by the programmers*



*As installed at the user's site*



*What the user wanted*

# 1- Variations – General

- “variation term” used in two different senses:
  - change in the **contractual terms**, e.g. where the Parties agree that the date for Taking Over is to be earlier than that specified in the Contract – variation of the Contract;
  - Instruction to the Contractor to carry out work (**addition** or reduction) of the original scope of work under the Contract – variation under the Contract (“Variation”).

## 2- Variations of the Contract

- A claim for a variation of the contract:
  - Founded on basic contractual principles relating to formation and variation of the legal agreement between the Parties.
  - In the absence of a relevant contractual provision, neither the Employer nor Engineer has the power to order variations of the Contract (Parties must negotiate and agree).

### 3- Variations Under the Contract

- Contract usually has detailed provisions for the power to order, and the valuation of, variations under the Contract.
- This power is entrusted to the Engineer.

## Variations

What are they?

It is necessary to incorporate into the contract a mechanism for implementing changes which are found to be necessary or desirable during the construction period. Such changes are permitted to the works but not to the contract.

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### Definitions under the Red and Yellow Book:

1.1.6.9 *“Variation” means any change to the Works, which is instructed or approved as a variation under Clause 13 [Variations and Adjustments]*

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1.1.6.9 *“Variation” means any change to the Employer’s Requirements or the Works, which is instructed or approved as a variation under Clause 13 [Variations and Adjustments]*

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Tahseen Saleh

# Variations

(2017 editions)

Definitions under the Red and Yellow Book:

1.1.86 *“Variation” means any change to the Works, which is instructed as a variation under Clause 13 [Variations and Adjustments]*

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1.1.88 *“Variation” means any change to the Works, which is instructed as a variation under Clause 13 [Variations and Adjustments]*

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## 3- Variations under the Contract (cont'd)

- Sub-Clause 13.1 (Right to Vary), Variation may involve:
  - i. changes in **quantities**;
  - ii. changes to the **quality** and other characteristics;
  - iii. changes to the **levels**, positions, etc.;
  - iv. **omissions** unless work is to be carried out by others;
  - v. **additional work** necessary for the Permanent Works;
  - vi. Changes to the **sequence** or **timing** of the execution of the Works.

## 3.1 Right to Vary

Sub-Clause 13.1 (the FIDIC 1999 Red & Yellow Books)

*Variations may be initiated by the Engineer at any time prior to issuing the Taking-Over Certificate for the Works, either by an instruction or by a request for the Contractor to submit a proposal.*

*The Contractor shall execute and be bound by each variation, unless the Contractor promptly gives notice to the Engineer stating (with supporting particulars) that (i) the Contractor cannot readily obtain the goods required for the Variation, (ii) it will reduce the safety suitability of the Works, or (iii) it will have an adverse impact on the achievement of the Schedule of Guarantees. Upon receiving this notice, the Engineer shall cancel, confirm or vary the instruction.*

*Each Variation may include:*

The items in yellow colour are the additional contents in the yellow book

## 3.1 Right to Vary

### Sub-Clause 13.1(the FIDIC 1999 Red Book)

- (a) changes to the quantities of any item of work included in the Contract  
(However, such changes do not necessary constitute a variation),*
- (b) changes to the quality and other characteristics of any item of work,*
- (c) changes to the levels, positions, and/or dimensions of any part of the Works,*
- (d) omission of any work unless it is to be carried out by others,*
- (e) any additional work, Plant, Materials or services necessary for the Permanent Works, including any associated Tests on Completion, boreholes and other testing or exploratory work, or*
- (f) changes to the sequences of timing of the execution of Works.*

*The Contractor shall not make any alteration and/or modification of the Permanent Works, unless and until the Engineer instructs or approves a Variation.*

## 3.1 Right to Vary

Sub-Clause 13.1 (the FIDIC 2017 Red & Yellow Books)

*Variations may be initiated by the Engineer under Sub-Clause 13.3 [Variation Procedure] at any time prior to issuing the Taking-Over Certificate for the Works, ~~either by an instruction or by a request for the Contractor to submit a proposal.~~ This was deleted in the 2017 edition*

*.... Variation shall not comprise the omission of any work which is to be carried out by the Employer or by others unless otherwise agreed by the Parties.*

## 3.1 Right to Vary

Sub-Clause 13.1 (the FIDIC 2017 Red & Yellow Books)

*The Contractor shall ~~execute and~~ be bound by each variation instructed under Sub-Clause 13.3.1 [Variation by Instruction], and shall execute the Variation with expedition and without delay, unless the Contractor promptly gives notice to the Engineer stating (with supporting particulars) That:*

- a) *the varied works was Unforeseeable having regard to the scope and nature of Works described in the Specifications; (Employer's Requirements;)*
- b) *the Contractor cannot readily obtain the Goods required for the Variation; or*
- c) *it will adversely affect the Contractor's ability to comply with Sub-Clause 4.8 [Health and Safety obligations] and/or Sub-Clause 4.18 [Protection of Environment];*

## 3.1 Right to Vary

Sub-Clause 13.1 (the FIDIC 2017 Red & Yellow Books) Cont'd

- d) it will have an adverse impact on the achievement of the Schedule Performance Guarantee; or*
- e) it may adversely affect the Contractor's obligation to complete the Works so that they shall be fit for the purpose(s) for which they are intended under Sub-Clause 4.1 [Contractor's General Obligations].*

## 3.1 Right to Vary

### Sub-Clause 13.1 Notes and Comments

- a) Part of the Engineer's roles is to initiate the Variations.
- b) The Contractor must comply with the Engineer's instruction unless he promptly gives the notice described in the second paragraph of Sub-Clause 13.1 with the supporting particulars. The yellow book provides two more criteria under such notice.
- c) if the Variation is confirmed and not varied, the confirmation should be in writing and address the issues raised in the Contractor's notice.
- d) if the Variation itself is varied, it may be a new "Variation", to which the Contractor may respond by giving a new notice under the second paragraph.

## 3.1 Right to Vary

### Sub-Clause 13.1 Notes and Comments (Cont'd)

- e) it is important that the Contractor remains responsible for his design; however, the Employer will be responsible for any design solution which he imposes.
- f) the red book after the second paragraph continues by listing the broad extent to which the Engineer may instruct Variations.
- g) the red book Sub-Clause 13.1 concludes by denying the Contractor the right to alter or modify the Permanent Works except in accordance with Variations. There is no such constraint against altering or modifying the Permanent Works in the yellow book, because such constraint would have been ambiguous.

## 3.1 Right to Vary

### Sub-Clause 13.1 Notes and Comments (Cont'd)

- h) it shall be noted that under a re-measurement Contract such as the Construction Contract, changes in quantities are inevitable.
- i) therefore, not all changes in quantity are variations.
- j) for a change in quantity to be classed as a Variation, it must result from an Engineer's instruction.

## 3.1 Right to Vary

### Sub-Clause 13.1 Notes and Comments (Cont'd)

#### k) Is Employer's approval needed?

- Sub-Clause 3.1 (Engineer's duty and Authority):
  - “Engineer shall have no authority to amend the Contract”
  - (i.e., to make a variation of the Contract).
- Engineer may be required to obtain Employer's approval before exercising an authority, as stated in Particular Conditions.

## 3.1 Right to Vary

### Sub-Clause 13.1 Notes and Comments (Cont'd)

#### k) Is Employer's approval needed?

- However, if Employer's approval is required before Engineer issues an instruction and the Engineer does issue an instruction, Employer is deemed to have given approval.
- So, the Contractor does not need to check if the Employer has approved the payment of a Variation (he follows instruction; has right to be paid).

## 3.1 Right to Vary

### Sub-Clause 13.1 Notes and Comments (Cont'd)

#### I) Does the Contractor have an escape route?

- Unless and until Engineer instructs a Variation (or approves a Variation suggested by Contractor), Contractor is to continue working according to the original design.
- Once Contractor has received a Variation instruction, he must execute the Variation (even if no agreement on price and timing).

## 3.1 Right to Vary

### Sub-Clause 13.1 Notes and Comments (Cont'd)

#### I) Does the Contractor have an escape route?

Escape routes (Construction Contracts)

- i. Contractor is not bound by a Variation if he cannot readily obtain the Goods required for the Variation.
- ii. MDB Harmonised Edition: Contractor is not bound by a Variation if it “triggers a substantial change in the sequence or progress of the Works”

## 3.1 Right to Vary

### Sub-Clause 13.1 Notes and Comments (Cont'd)

#### I) Does the Contractor have an escape route?

Escape routes (**Plant & DB Contracts**)

- Contractor is not bound by a Variation if:
  - i. He cannot readily obtain the Goods required for the Variation;
  - ii. If the Variation will reduce the safety or suitability of the Works; or
  - iii. If the Variation will have an adverse impact on the achievement of the Schedule of Guarantees

## 3.2 Timing of Variations

### Sub-Clause 13.1 Notes and Comments (Cont'd)

- When can a Variation be initiated?
  - “... at any time prior to issuing the Taking-Over Certificate”.
  - Instruction can be given immediately before the issue of the Taking-Over Certificate to execute a Variation after the issue of the Taking-Over Certificate (i.e., during the Defects Notification Period).

## 3.2 Timing of Variations

### Sub-Clause 13.1 Notes and Comments (Cont'd)

- When can a Variation be initiated?
  - Instruction for Contractor to execute a Variation cannot be issued during Defects Notification Period.
  - If Employer or Engineer requests Contractor to do work during the Defects Notification Period that is not the Contractor's responsibility, it is treated as a Variation under Sub-Clause 13.3

## 3.3 Initiation and Instruction of Variation

### Sub-Clause 13.1 Notes and Comments (Cont'd)

- Contractual procedures for additional and/or varied work is a difficult and important area.

- Is the work claimed by the Contractor truly extra and/or varied work?

That a Contractor has carried out extra work is not sufficient to give rise to a right to claim for additional payment.

- Can the Contractor recover payment for additional work without formal request and/or written orders?

Requirements for request to be in writing – or some stipulation as to a proper written order – regarded as a condition payments precedent to the right to claim payments.

## 3.3 Initiation and Instruction of Variation

### Sub-Clause 13.1 Notes and Comments (Cont'd)

- The Engineer has two ways to initiate a Variation:
  1. Direct instruction under Sub-Clause 13.1 (Right to Vary),  
or
  2. Request for a proposal from the Contractor under Sub-Clause 13.3 (Variation Procedure), prior to issuing an instruction.

## 3.3 Initiation and Instruction of Variation

### Sub-Clause 13.1 Notes and Comments (Cont'd)

#### 1. Direct instruction

- Engineer can issue instructions to change much concerning the Works, see Sub-Clause 13.1 (Right to Vary) (a) to (f).
- These are all matters that concern the Permanent Works defined in the Contract and do not result in changing the scope or size of the Works.
- Cannot issue instructions under sub-Clause 13.1 for additional work unless it is “**necessary** for the Permanent Works”.
- If the Employer wants the Contractor to carry out additions to the Works, then he must negotiate an addition to the Contract itself.

## 3.3 Initiation and Instruction of Variation

### Sub-Clause 13.1 Notes and Comments (Cont'd)

- Instruction to be in writing.
- If given orally, can be confirmed in writing by the Contractor within 48 hours after receipt of the instruction and unless the Engineer contests this confirmation within the next 48 hours, the instruction is deemed to have been given.
  - Which Sub-Clause?
  - What is the case in 2017 edition?
- If Engineer does not state that the instruction represents a Variation, the Contractor must submit a Notice of claim under Sub-Clause 20.1 if he intends to claim additional payment and/or time.

## 3.3 Initiation and Instruction of Variation

### Sub-Clause 13.1 Notes and Comments (Cont'd)

#### ➤ **Contractor:**

- Must carry out the Variation if instructed.
- Has limited grounds to object (cannot obtain the Goods required)
- Even if the Contractor gives notice that he cannot readily obtain the Goods required, the Engineer has the option of cancelling, varying or confirming the instructions (thereby ignoring the Contractor's notice or objection).

## 3.3 Initiation and Instruction of Variation

Acceleration and/or bringing forward of Time of Completion:

Covered by Sub-Clause 8.6 and 13.2

Instruction not in accordance with the Variation procedure:

- Variation procedure requires that any change is initiated by Employer (through Engineer). If the Engineer seeks to instruct a variation other than in accordance with the variation procedure, should Contractor comply?
  - Contractor should insist upon compliance with the variation procedure
  - If a quick decision needed, Parties to agree.

## 3.3 Initiation and Instruction of Variation

### 2. Request for Proposal:

- Not just a matter of the Contractor submitting a price for a proposed Variation.
  - Engineer may ask for a detailed technical proposal, together with details of the impact on the programme, and on other aspects of the Works.
- ✓ Under which Sub-Clause of the 2017 edition is this article addressed?

## 3.3 Initiation and Instruction of Variation

### 2. Request for Proposal Procedure:

- Engineer requests a Contractor's proposal.
- Contractor shall respond as soon as possible.
- Response to include:
  - i. Description of proposed work and programme for execution
  - ii. Proposal for modifications to Time for Completion and the programme pursuant to sub-Clause 8.3
  - iii. Proposal for evaluation of the Variation.

## 3.3 Initiation and Instruction of Variation

### 2. Request for Proposal Procedure:

- Engineer must reply as soon as practicable either approving, disapproving or with comments.
- Contractor to continue working as though there had been no request for a proposal (request is not an instruction).

## 3.3 Initiation and Instruction of Variation

### 2. Request for Proposal Issues:

- How does timing of the proposed Variation impact a decision to instruct a Variation or request a proposal?
  - Contractor must not delay any work whilst awaiting a response.
  - Even if a proposal process has started, the Engineer may nevertheless initiate an instruction prior to receiving the proposal or completing discussion on the proposal.

## 3.3 Initiation and Instruction of Variation

### 2. Request for Proposal Issues:

- Is a proposal automatically considered to be a fixed price and time offer?

No: Clause 12 (Management and Evaluation) applies unless the Engineer instructs otherwise.

## 3.4 Value Engineering

- Increasingly important part of the construction process.
  - Aims:
    - Parties seek to derive mutual benefit, and to benefit jointly from the project;
    - Each party is encouraged to seek saving and/or gains;
    - Enable the Employer to benefit from the Contractor's experience and proposals.
  - Requirements:
    - Value Engineering proposal shall comply with the list of requirements set out in sub-clause 13.3 [*Variations Procedure*].

## 3.4 Value Engineering

But:

- proposals made by the Contractor could rebound as criticism of the Engineer's original proposals.
- Could involve the Contractor in substantial costs which may, or may not, be recovered.
- Contractor slow to submit, unless obvious remuneration.
- Complexities involved in the concept of net benefit, e.g., capital expenditure involved in a different equipment is less, but the costs of upkeep and maintenance is higher.

## 3.4 Value Engineering

### Change in Design

- Sub-Clause 13.2 distinguishes proposals that do and do not include a change in design of part of Permanent Works. If there is a design change element:
  - Contractor to ensure that the design complies with Sub-clause 4.1 [*Contractor's General Obligations*], since Contractor only has design responsibility to the extent specified in the Contract.
  - Contractor will have to rely on any benefit from savings in his own cost.

## 3.4 Value Engineering

### Change in Design (cont'd)

- Unless Parties agree otherwise, Contractor to design the change part and receive a fee provided the reduction in contract value is greater than any reduction in the value of the works to the Employer. Fee calculated by the Engineer following Sub-clause 3.5 [*Determinations*].

## 3.4 Value Engineering

### Split Saving

- If there is a resulting reduction in the Contract value, then the fee is calculated in accordance with “split savings” formula.
- Split savings: difference between the “reduction in contract value”, and the “reduction if any) in the value to the Employer of the varied works.”

## 3.4 Value Engineering

### Split Saving (Cont'd)

- Can be difficult to evaluate and agree on the difference, e.g., estimate of future operating costs or improved efficiency.
- Contractor may not claim costs for preparing proposal.
- Risk of the Value Engineering change is the Contractor's one. Contractor receives 50% of the difference.

## 3.4 Value Engineering

### Example

- Four pumps foreseen by the design are replaced by two larger pumps.
- The supply and installation cost of the pumps may be reduced.
- But what will be the costs to the Employer if in five years time one of the two pumps is out of operation (50% drop in available capacity) for six months, compare to the cost that would have been incurred if one of the four smaller pumps was out of operation (25% drop in available capacity)?
- Will the cost and time for repairing the larger pump be the same as the cost and time for repairing for smaller pump?

## 3.5 Valuation of Variations

Sub-Clause 12.3 aims at:

- Limit claims, expressly by limiting the areas where new rates can apply (rule for an evaluation of the appropriate rate is “the rate or price for that work specified in the Contract”).
- Define situations and circumstances in which a rate in the Contract will be inappropriate so that a new rate or price is to be found.
- Confirm that a Variation may or may not be the trigger for the process of establishing a new rate.

## 3.5 Valuation of Variations

### Bases for Valuing rates:

- Basis for valuing Variations defined in Sub-Clause 12.3 (b):
  - Existing rates are to be used as far as possible.
  - If the existing rates are not applicable because:
    - Work is dissimilar from other Bill of Quantities items, or
    - Work is executed under different circumstances (e.g., smaller working area or at a different period), new rates (or “star rates”) should be derived from existing rates.

## 3.5 Valuation of Variations

### Bases for Valuing rates (Cont'd):

- New rates and prices are to be derived from any relevant rates or prices in the Contract, with reasonable adjustments having regard to the matters set out in (a) and/or (b).

## 3.5 Valuation of Variations

### Bases for Valuing rates (Cont'd):

- If this is not possible, new rates must be built up based on the reasonable Cost of executing the work plus Profit.
- MDB Harmonised Contract, “Profit” is 5% of reasonable Costs.
- “Cost” is “all expenditure reasonably incurred (or to be incurred) by the Contractor whether on or off the Site, including overhead and similar charges, but does not include profit”.

# التغيرات (1) Variations (Part I)

## Justice Academy

# THANK YOU



- Tahseen Saleh
- [tahseen@olamanagement.com](mailto:tahseen@olamanagement.com)
- +1(519)870-6630
- +962-79-911-0350
- +974 5522 6500
- +974 7726 5000

