12 A Procedure or a Set of Instructions

This chapter covers:

- The structure of an efficient set of instructions
- The required language
- Checklist

Purpose

To explain to someone how to do something clearly, precisely and accurately. Procedures may provide the following:

- Steps for assembling something
- Steps for operating something
- Steps for maintaining, adjusting, repairing or troubleshooting something

Difficulties

Knowing who you are writing for and under what circumstances they will be using the product or system you are describing. This type of 'how-to' writing is often confusing and poorly written. It comes from not realising that most other people do not have the in-depth knowledge of the system that you do.

To avoid this, place yourself in the reader's mind and work out what they need to hear from you. It can be difficult to distance yourself from your own knowledge and do this.

How to Write it

This section is divided into two parts:

1. Possible structure for a procedure
2. Guidelines for wording the instructions

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Possible Structure for a Procedure

Section	Cross-Reference to the Relevant Part of the Book

1. Introduction
Include a short purpose statement. This is important. Many writers assume that because they are telling readers what to do, there is no point in telling them why to do it. This is dangerously wrong; most people won't automatically see the wisdom of doing it your way or the possible dangers involved. Include the following:
• Introduce the material, explaining the **purpose** for and the **importance** of the instructions.
• Give a brief overview to help the reader understand:
  • How the product or system works
  • Why the instructions must be followed
  • What will be achieved
	See **Introduction**, Chapter 2: *The Core Chapter*, page 28

2. Glossary of Terms and Abbreviations Give clear, precise definitions. Place this section at the front of the document so that the reader can easily find them.	See **Glossary of Terms and Abbreviations**, Chapter 2: *The Core Chapter*, page 27
3. Tools and materials required List the tools and the materials that the reader will need.	
4. Special instructions, e.g. safety warnings Prominently display any special items such as safety warnings. But make sure that an important warning is also repeated in the instruction to which it relates.	
5. **Then give a numbered series of instructions** (for guidelines, see below).	

Guidelines for the Wording of the Instructions

Headings that have widely accepted meanings

DANGER	Reserved for steps in a procedure that could lead to injury or loss of life.
WARNING	Used for steps that could result in damage to the product.
CAUTION	Used where faulty results could occur.
COMMENT	Used to: • Alert the reader to a potential problem. • Make suggestions that would make the reader's task easier.

Summary of guidelines

1. Remember that most people do not read a complete set of instructions before they start.
2. Use the imperative form of the verb, i.e. one that gives an instruction.
3. Use the pattern *if…then*. Do not give the instruction first.
4. If there is a safety aspect, give the warning first. Do not give the instruction first.
5. Do not leave out vital information.
6. Do not leave important actions to the discretion of the reader.
7. Be clear and unambiguous.
8. Let each instruction require only one action.
9. Use simple words.
10. Write one-way directions.
11. Be safety-conscious.

The guidelines summarised above are described in more detail and with examples below:

1. **Remember that most people do not read a complete set of instructions before they start.** When you write, remember that the reader is carrying out each of your instructions while reading it, without knowing what comes next. Two things to remember:
   a. Write chronologically, i.e. take into account the sequence in which people will do things.

Poor Example
A set of assembly instructions for a piece of kitset furniture, which has as its final direction: *Remember to glue all pieces as you assemble them.*

   b. If the procedures are conditional on something (*if…*), say so at the beginning.

Poor Example	***Rewritten as the First Instruction of a Set***
A procedure in which the final instruction is: *If the temperature is above 18°C, DO NOT carry out the above procedures.*	**If the temperature is above 18°C, DO NOT carry out the following procedures.**

2. **Use the imperative form of the verb, i.e. one that gives an instruction.**
   Give orders clearly so that there is no mistaking what you mean. Avoid the word *should*.

Poor Examples	***Rewritten as an Instruction***
The power switch should be turned off. Or *You should turn the power switch off.*	**Turn the power switch to OFF.** Negative instructions are also effective. **Do NOT turn the activator dial.**

3. **Use the pattern *if… then*. Do not give the instruction first.**
   The pattern 'if…then' asks the reader to consider whether the condition applies before carrying out the action.

Poor Example	*Rewritten, Stating the Condition First*
Push the red button, but only if procedure A has failed.	**If procedure A fails, push the red button.**

4. **If there is a safety aspect, give the warning first. Do not give the instruction first.**

Poor Example	*Rewritten, Giving the Warning First*
Light the match and slowly bring it towards the nozzle. Do not light the match directly over the nozzle.	**WARNING: Do not light the match directly over the nozzle.** **Light the match and slowly bring it towards the nozzle.**

5. **Do not leave out vital information.**
   Remember that you are familiar with the procedure; your reader is not. Do not assume that the reader will understand what you meant to say. State it explicitly so that the reader does not have to think, only to act.
6. **Do not leave important actions to the discretion of the reader.**
   Avoid words such as *should* and *may*.

Poor Example	*Rewritten So That Reader Does Not Have to Use Discretion*
The condensate line may need to be drained.	**1. Read and record the condensate level on the sight glass.** **2. If level is greater than 15 cm, open Valve D.** **3. Drain the condensate line.** **4. Close the valve when steam begins to come out of the valve.**

7. **Be clear and unambiguous.**
   - Write your instructions from the position – quite literally – of the reader.
   - Terms such as *front* and *back*, and *left* and *right* can be confusing. If you were standing in front of the device when writing the instructions, left and right are reversed for the repair technician standing at the back. And it might be the right way up when installed but upside down when being repaired.
   - Therefore, avoid these terms whenever possible, or carefully explain the viewing direction.

Poor Example	*Rewritten from the Reader's Position*
Make sure the switch is in the upwards position, and then close the drain valve.	**Make sure the switch is in the OFF position, then close the drain valve.**

8. Let each instruction require only one action.
The possibility for confusion is reduced if you make sure that only one action is contained in each numbered instruction.

Poor Example	*Rewritten as a Series of Actions*
Ensure that both the water supply valve and the feed valve are open, and then start the slurry transfer pump by pressing the START button.	**1. Ensure that both the water supply valve and the feed valve are open.** **2. Then start the slurry transfer pump by pressing the START button.**

9. Write one-way directions.

Poor Example	*Rewritten as One-Way Directions*
These instructions are in the reverse order. Obeying them in the sequence given could ruin the pump and probably damage the preset control valve.	
1. *Start the pump.* **2.** *Before starting the pump, check to see that the cooling-water valves are open and that the control valve is open.* **3.** *The control valve is preset and should not be adjusted.*	**1. Make sure that the control valve is open. Do not adjust it; it is preset.** **2. Make sure that the cooling-water valves are open.** **3. Start the pump.**

10. Use simple words.
Use the simplest words possible.
Do not use jargon, e.g. don't say *deactivate* when you mean *turn it off.*

11. Be safety-conscious.
Safety instructions and warnings must be well thought out and prominently placed at the beginning of the instructions.

Poor Examples	*Rewritten*
The main point of this message – that there is a danger of flashback – is at the end.	The main message is now at the beginning, highlighted by the word **DANGER**. This is followed by a strong negative instruction.
• *Valve X is not to be opened before cooling to 18°C because of the possibility of flashback.* • *Do not open Valve X before it has cooled to 18°C; there is a danger of flashback.* • *On no account should you open Valve X before it cools to 18°C, or you may cause flashback.*	**DANGER OF FLASHBACK: DO NOT open Valve X before it cools to 18°C.**

Common Mistakes

Procedures that lack detail or are confusing. This arises from the following:

1. Not taking into account that your reader will know far less about the system or product than you.
2. Using complex or ambiguous language.

Checklist for a procedure or set of instructions

- ☐ Do you use the words **DANGER, WARNING, CAUTION** and **COMMENT** in accordance with their widely accepted meanings?
- ☐ Do you list the tools and materials required?
- ☐ Is there a *Glossary of Terms and Abbreviations* that gives clear, precise definitions?
- ☐ Are special instructions such as safety warnings prominently displayed?
- ☐ Is the imperative form of the verb used?
- ☐ If the instruction is conditional on something, is the pattern *if… then* used?
- ☐ If there is a safety aspect, is the warning given first, before the instruction?
- ☐ Has any vital information been left out?
- ☐ Have any important actions been left to the discretion of the reader?
- ☐ Is each instruction clear and unambiguous?
- ☐ Does each instruction require only one action?
- ☐ Is each direction one-way?
- ☐ Is the wording simple? Have you avoided jargon?
- ☐ Is the whole procedure safety-conscious?