

MEMO LABORATORY REPORT FORMAT

BACKGROUND

Various types of reports are employed in the engineering profession (memos, status reports, interim reports, final reports, etc.) but each category has a fairly standard format. This document presents a *short lab report (memorandum)* format that is frequently employed by consulting engineers for small projects. An example of a *memo lab report* is also presented at this Web site (<http://www.eng.uwyo.edu/classes/meref/>). All reports should be "sent" with a Letter of transmittal.

LETTER OF TRANSMITTAL

The Letter of Transmittal sends the report, stating the report title, establishing the purpose of the report, informing or reminding the reader of why, when, and whom authorized the report, summarizing the main subject of the report and acknowledging other contributors. It is the first item the reader sees; therefore, it is placed *before* the enclosed report.

MEMO LABORATORY REPORTS

Short reports are generally in response to a specific request from a supervisor or a client. There are several different types, such as incident, investigative, progress, and trip reports as well as proposals. Each has its own objectives and styles, appropriate for the particular situation it is reporting about. The investigative type, which analyzes data and seeks to answer *why* or *how* something happens under certain conditions, will be used in this laboratory course.

To limit length, all short reports must be clear and concise. A typical short report is divided into sections, e.g. *Purpose, Summary, Procedures, Results, Conclusions* sections and the *Attachments*. Section headings are aligned with the left-hand margin in a memo and may be simply capitalized and/or given bold or italicized font. Each of the sections, except for the attachments, should be around one paragraph in length yielding a one- to two-page narrative. This two-page restriction is mainly presented to emphasize the demand for conciseness; *but* completeness is still essential! Recognize that the format itself is also flexible; however, all the critical elements or information need to be included. For example, a sample description must be included in the *Procedures* section; the *Results* and *Conclusions* are frequently combined. The essential supporting documentation is included as *Attachments*.

Note, to qualify as an **objective report**, the text should avoid all usage of **first person** (we, us, our) as well as all usage of **second person** (you, your). While those are quite acceptable in a letter, the report should confine itself to **third person** only. Also notice that, *if* done in moderation, **passive voice** is acceptable in this type of writing.

LISTING OF THE DIFFERENT ELEMENTS TO BE INCLUDED IN A TECHNICAL MEMO REPORT:

Heading/Closing Sections – includes the following information:

- Client's name, title, and organization
- Any important secondary audiences including their name(s), title(s), and organization(s)
- Report's author(s), title(s), and organization(s)
- Date
- References to previous communications
- Subject of the report
- Detailed listing of the different attachments, with specific descriptive titles

Purpose - reminds the client of his/her work or information request.

Summary - a synopsis of the essential information. The client should only have to read the **Purpose** and **Summary** sections to obtain the requested information.

Procedures - an overview of the experimental (i.e. tests performed) *and* the analytical procedures. If the procedure is solely exploratory or experimental, than the suitable heading is *Experimental Procedures*. Common names and appropriate descriptive terms of the samples should be used in this description.

Results - a summary of the primary (i.e., bottom-line) numerical results. Use quintessential tables and/or graphs as appropriate. Graphs and tables are very effective and efficient methods for presenting lots of information or data but details are relegated to the attachments.

Conclusions - summarizes the consultant's results and conclusions. Present an interpretation of the data – *what do the results mean physically?* Discuss the sources and relative magnitude of any significant errors. Present a prioritized list of actions to be taken and recommendations.

Attachments - presents the details and documentation required to replicate the work. Arrange the attachments in some logical order, e.g., in order of reference or in descending order of importance. The different items will include, but are not necessarily limited to:

- Details of the Testing Procedure and a Schematic of the Test
- Data and Analysis Sheets – complete with headings, displayed equations, notes to lead the reader through the analysis.
- Sample Calculations
- Detailed Visuals and Tables – these may be of intermediate as well as final results
- Original Raw Data – Absolutely necessary for most classes; may not be necessary in industry.

After you have completed the memo, look at the heading and closing sections and ask: *Have the audiences, source, subject, and relevant reference information been identified so that the recipient(s) immediately know the significance of the letter? Is there a proper salutation and closing? Is the memo signed? Are the attachment listings clearly identified?*

Now look at the first one or two paragraphs and ask: *Is a concise statement of the client's request and/or the problem and the objective of the test provided? Are the important conclusions and recommendations briefly stated so that the reader will not have to read further into the report? The reader should be able to get the bottom-line results and recommendations within the first two*

paragraphs without digging further into the memo itself or the attachments. The reader's attention must be captured within these first two paragraphs.

Re-read the procedures section and ask: *Does the reader have a clear sense of the tests performed (including types, number of trials, etc.) as well as the analysis performed on the data? Does the reader have a clear visual sense of the items (including the items' sizes, materials, number tested) after reading this passage?*

Look at the concluding paragraphs and ask: *Are the bottom-line results given in a clear, concise format? Is the data interpreted for the reader so they know the physical implications of the results? Is error quantified and error sources identified qualitatively? Are the final recommendations clearly stated?*