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**The Role of Compounding in Technical English Prescribed for
Engineering Students in Tamilnadu**

P. Malathy, M.A., Ph.D.

1. Glimpses on Compounding

Compounding is frequently used in the word formation process in Technical English. Flexibility in compounding and the ease with which it can be applied to express complex meanings and concepts make compounds a great favorite in Technical English.

Compounding is a process whereby two free morphemes are combined as one word. They differ from both derivational and inflectional affixation as they are the exclusive amalgamation of two free morphemes. For instance, the form 'black box', consisting of two free morphemes, may be interpreted as a box that is black in colour, but the concept borne by the compound, *blackbox*, points out to the fluorescent orange colour box fitted in the aeroplanes to explore the history of any mishap during emergencies.

In the word *rainbow*, there are two individual morphemes 'rain' and 'bow' to mean two different things, when these are not combined. However, the combination of these two words gives a new dimension to the words, *rain* and *bow*, by associating a new meaning to it.

In compounding, when two or more free morphemes are combined, we get a form without any change in their original forms, but such a combination results in some new meaning. Adjacency of these free morphemes ushers in a new concept/meaning.

The prime difficulty in exploring the form and function of the compound words in English is that there are no systematic rules for the compounding of two or more free morphemes.

Perhaps, it might simply be expected that in English, two words will be compounded when they are frequently used together. However, to make things slightly more complicated, the English language also consists of compound words whose meanings have seemingly lost their connection to their constituents' meanings. The meaning of the word *deadline*, for example, has little to do with 'death' or 'line'.

2. Compounding in Technical English

Compounding is prevalent in Technical English prescribed for engineering students in Tamilnadu, India (and this, indeed, is a good plan and wise move). For instance, the use of the compounds given below, frequently seen in engineering texts, may confuse the students when not expanded properly.

Fire-tube-boiler
Condenser-extraction pump
Butt-weld
Highbandwidth-internet-connectivity

An important goal of the syllabus prescribed for the engineering students in Tamilnadu is better comprehension of the compounds with a special focus on engineering texts.

The teaching and learning of the compounds poses some difficulty in the engineering classroom. It appears that the authors of engineering textbooks are more focused on the presentation and interplay of the concepts, etc., rather than on the presentation mode and language style they should adopt to make their texts readable and easily comprehensible. Thus, the compound jargon used in engineering texts often goes beyond the entry level of students' comprehension. As a matter of fact, the conjoining of morphemes in compounds leads to ambiguous comprehension, if the students are not acquainted with the process of compounding and the meaning nuances/results that the combination brings about. Hence, it becomes very essential to resolve the ambiguity of such technical and engineering jargon.

The Tamilnadu syllabus, thus, is on right direction in focusing upon this important aspect of English language use, but the teachers of English and Engineering need to devise

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suitable strategies to overcome the difficulties faced by the students through a variety of exercises. For example, the Engineering syllabus suggests exercises on expanding the nominal compounds and defining the technical jargon. What needs to be done, however, is to enable the students to use the compounds in a variety of contexts. Identification of the underlying structure, comprehension of the meaning of such compounds and use of the compound form should all be integrated.

3. Compounding and English for Engineers

The students of engineering learn the connotative discrepancies in some of the engineering jargon like *powerhouse*, *software*, *workshop*, etc. The ambiguity is resolved by expanding such nominal compounds. The students are taught that the connotation of *powerhouse* is extremely away from either ‘power’ or ‘house’, the meanings of ‘soft’ and ‘ware’ have nothing to do with ‘software’ and what ‘work’ and ‘shop’ mean are totally different from a ‘workshop’.

Thirumalai (2003, <http://languageinindia.com/jan2003/languageinscience.html#chapter4>) points out, “the English used in science [including engineering and technology] consists of a restricted range of sentence types that are also used in ordinary language. Thus, it is the literary and ordinary English that uses a number of types of sentences in addition to those types that are common to it and the language of science.”

What this implies is that our students of engineering need to continuously develop their competence in the ordinary use of the English language even as they are trained in the use of Technical English. The specific features of Technical English are located also in the coinage and use of Technical English. Compounding is a significant part of these special features of Technical English.

It is important for the teachers of English in the colleges of engineering to have a clear idea of the processes of the coinage and use of Technical English. However, the teaching of Technical English need not involve any detailed description of how technical terms are described using linguistic terms, etc. Use of linguistic jargon will further confuse the students. So, what needs to be done is to provide the students with a variety of exercises without using any linguistic jargon.

To help this process, I list below various important processes of compounding in English, available in most books on English grammar.

For simplified comprehension, the compounds used in Technical English are classified under two sub-units, namely,

1. Syntactic Compounds

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2. Juxtapositional Compounds

3.1. Syntactic Compounds

The syntactic compound serves in sustaining the flow of the discourse by strictly following the syntactic rules of English.

The following combination of free morphemes gives the general use of syntactic compounds in Technical English.

- a) Verb + Noun
- b) Adjective + Noun
- c) Verb + Preposition
- d) Preposition + Noun
- e) Phrasal Compounds

Verb + Noun

It is a combination of two free morphemes where the verb precedes the noun in the same word without the separation of the morphemes either by a hyphen or by leaving a space in between.

Typewriter	– Combination of the verb, ‘type’ with the noun, ‘writer’
Talktime	– Combination of the verb, ‘talk’ with the noun, ‘time’
Stoplock	– Combination of the verb, ‘stop’ with the noun, ‘clock’

Adjective + Noun

This concatenation comprises of an adjective and a noun. As this combination sustains the norms of syntax, it is categorized under syntactic compounds.

Software	– ‘soft’ serves as an adjective and ‘ware’ is the noun
Joystick	– ‘joy’ serves as an adjective and ‘stick’ as noun.
Fax machine	– ‘fax’ serves as adjective and ‘machine’ as noun.

Verb + Preposition

In this amalgamation the verb precedes the preposition and thus preserves the syntax of the language.

Login	– ‘log’ is the verb and ‘in’ is the preposition
Printout	– ‘print’ acts as the verb and ‘out’ is the preposition
Shutdown	– ‘shut’ is the verb and ‘down’ is the preposition

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Preposition + Noun

These compounds aid to stick on to the syntactic norms of the precedence of the preposition before nouns.

- Upgrade – Combination of the preposition, ‘up’ with the noun, ‘grade’
- Overflow – Combination of the preposition, ‘over’ with the noun, ‘flow’
- Inplant – Combination of the preposition, ‘in’ with the noun, ‘plant’

Phrasal Compound

This type of syntactic compounds exhibits the combination of a minimum of three free morphemes that are perhaps hyphenated in the written discourse.

- Fire-tube-boiler – Combination of three free morphemes, ‘fire’, ‘tube’ and ‘boiler’
- Condenser-extraction-pump – Combination of three free morphemes, ‘condenser’, ‘extraction’ and ‘pump’
- Out-of-Print – Combination of three free morphemes, ‘out’, ‘of’ and ‘print’

3.2. Juxtapositional Compounds

The second classification of compounds signifies the need for juxtaposition of the compounds. These compounds hardly aid in sustaining the syntax of a sentence. besides exhibiting the salient feature of assuming absolutely discrepant meanings when juxtaposed (Baruah, T.C., p. 90).

In other words, the free morphemes of the juxtapositional compounds are simply placed side by side and are not connected by any syntactic rule. There are combinations of five different types.

- a) Noun + Noun
- b) Noun / Abbreviation + Present Participle
- c) Present Participle + Noun
- d) Noun + Verb
- e) Adjective + Noun

Noun + Noun

The occurrence of two nouns immediately one after another is the specialty of this type of juxtapositional combination. In this combination, the first word acts as a qualifier. This combination may also include hyphenation.

Screw-driver, Fire-Extinguisher, etc.

Noun/Abbreviation + Present Participle

This category exhibits the precedence of a noun/abbreviation or abbreviation before a present participle.

C-Debugging, E-Learning, etc.

Present Participle + Noun

In this combination, the present participle assumes the role of the qualifier of the noun that follows.

Moulding-Machine, Packing-Container, etc.

Noun + Verb

In this combination, the noun and the verb occur as wholesome units where the noun precedes the verb.

Manhandle, Heartbeat, etc.

Adjective + Noun

This combination is a popular occurrence of syntax that admits the presence of adjective in front of a noun. But, as a matter of fact, this is also a category of juxtapositional compounds as the free morphemes join together to form a single meaningful unit.

Main Memory, Molten metal, etc.

4. Some Additional Tips for Exercises

1. Collect the textbooks prescribed in your college for various engineering courses. Arrange them in the order in which these are used in various courses. Some may be the textbooks used in the first semester, some in the second semester, etc.

2. List the technical terms.

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3. Classify the technical terms used in the engineering textbooks under various groups, as given in the description of compounds in earlier sections.

4. Workout a variety of exercises that would include: Identification of the underlying structure, comprehension of the meaning of such compounds and use of the compound form in an integrated manner. Focus on the spelling and space between words. Focus also on the verb endings when such technical terms are used. Relate these to the common use in newspapers and technical journals.

5. Emphasize through examples how simple use of the language as seen in short sentences and straightforward expressions will help clarify their (students) thinking and presentation. Ultimately, simplicity and neatness of pattern help easier comprehension of any presentation.

5. Conclusion

Compounding is a frequently used process of word formation in Technical English. Mastery of compounding helps quick comprehension besides avoiding elaborate explanation all over the text every now and then.

However, students have difficulty in fully comprehending the compounded technical terms as the relationship between the components of a technical term may not be easy to identify. We need to develop this skill in our students to enable them not only to comprehend and use the texts they encounter in engineering textbooks, but also to express themselves with clarity.

At some level, use of the jargon becomes a must, and the jargon itself comes to represent almost everything that a competent engineer wants to present to others.

Thus there is a need to help our students to master the coinage and use of technical terms and their underlying processes, with suitably graded exercises based on a sound and sufficiently adequate description of compounding in English.

The strategies of compounding discussed in this paper will help the teachers of English to devise their own suitable materials and strategy to impart the essential compound jargon of texts to the students.

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