

**DIVISION OF AN ARRAY ISOLATE IN [1P1]
AND
IN LATER LEVEL : A CASE STUDY
(TECHNICAL NOTE 49)**

1 Document 1

Consider the document

Fitting screws in diesel engines

The subject of this document goes with the Basic Class "Production Engineering of Diesel Engine."

A perusal of the document indicates that it concerns Diesel Engines with a Swirl-type combustion Chamber. The possession of Swirl-type Combustion Chamber becomes a first characteristic or a qualifier—that is, a Quasi Isolate—of the Diesel Engine, in [1P1]. The specific subject of the document is, therefore, "Fitting Screws in a Diesel Engine having a Swirl-type Combustion Chamber".

The following Class Number is, therefore, assigned to the document (for the schedule see Lib sc 2;1965; Paper B) :

D9L22,rK,r3:7

2 Document 2

Consider the document

Fitting screws in the swirl-type combustion chamber of a diesel engine

The subject of this document also goes with the Basic Class "Production Engineering of Diesel Engine". In this case, the screws are fitted into the combustion chamber only. The combustion chamber is of the swirl-type. In other words "Swirl-type" is a qualifier of the Organ "Combustion chamber". The following Class Number is, therefore, assigned to the document :

D9L22,OFK,r3:7

Digit K here is got by scheduled mnemonics.

3 Subject Heading

Class Number	Subject Heading	Class Number
D9L22,rK,r3:7 =	Assembly, Screw, Swirl-type, Combustion chamber, Diesel engine	= D9L22,OFK,r3:7

4 Homonymy

In the example in Sec 3 we find two different Class Numbers getting the same Subject Heading. This is a case of homonymous Subject Headings.

The homonymy may be due to either of two reasons :

- 1 An error in the analysis in the Idea Plane of the two subjects considered ; or
- 2 The inadequacy of the Verbal Plane—that is, the language used for the Class Index Headings not having two different terms to denote two different classes.

5 Paramountcy of the Idea Plane

The decision arrived at in the Idea Plane is paramount. It must be checked first. If any error has been committed in the analysis of the subject it must be corrected first. Only after having satisfied ourselves that no error has been committed in the Idea Plane, we should go into the inadequacy of the Verbal Plane.

6 Postulational Approach

One method of checking the results of the work in the Idea Plane is go over carefully the successive steps in the analysis of the subject and synthesis of the Class Number as carried out in the Postulational Approach in classification (Ranganathan (S R) : *Elements of library classification*. Ed 3. 1963. Chap N)

With respect to document 1 it was found that the analysis of the subject content was correct.

In respect of document 2, it was found that the analysis of the subject content was not correct. The error was due to the way in which the subject was denoted in the title. An impression was created that the characteristic "Swirl-type" was to be deemed a qualifier of the organ "Combustion chamber".

61 A careful analysis indicates that when the subject of the document is "Fitting screws in the swirl-type combustion chamber of a diesel engine", the diesel engine itself is of the kind possessing a Swirl-type Combustion Chamber. In other words "Swirl-type combustion chamber" is a First Characteristic or Qualifier—that is, a Quasi Isolate—of the Diesel Engine, in [1P1]. This is just as in the case of the subject in document 1. This implication was not recognised when the Class Number was first assigned to document 2.

62 The only difference between the subject embodied in document 1 and that embodied in document 2 is that in the former case, it is "Fitting of screws in the diesel engine as a whole" whereas in the latter it is

"Fitting of screws in the combustion chamber only".

Therefore, the co-extensive Class Number for document 2 would be D9L22,7K,F,c3:7

63 Applying Chain Procedure we get the following Subject Heading :

Assembly, Screw, Combustion chamber, Swirl-type, Combustion chamber, Diesel engine.

64 The Class Number D9L22,rK,F,r3:7 indicates that the qualifier "Swirl-type" is an isolate derived on the basis of the characteristic "By type of combustion chamber", in [1P1]. Therefore, there is no need to indicate again that the organ "Combustion chamber (in the later level) is of the swirl-type. It will be redundant. It violates the Law of Parsimony. It will also cause confusion in the Subject Heading.

For Example :

D9L22,rK,FK,r3:7=Assembly, Screw, Swirl-type, Combustion chamber,
Swirl-type, Combustion chamber, Diesel engine.

Further, it may also lead to cross classification, for instance, in a document of kind 2 discussed above, the classifier may use the Isolate Number for the Organ at one time and the Isolate Number in [1P1] at some other time. Such cross classification violates the Canon of Helpful Sequence, and the Canon of Consistency.

7 A Guiding Principle

To avoid the above difficulty, we may enunciate a principle as follows :

"In a subject going with a Basic Class in Commodity Production Engineering, if an organ is used as the First Characteristic—that is, Quasi Isolate—to classify a typical whole entity, then the characteristic used to derive the true isolates from it should not be used to sub-divide the same organ of the typical whole entity occurring in a later level in the same schedule.

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