DEVELOPING CRITERIA FOR A COURSE IN ENGLISH FOR AIRCRAFT TECHNICIANS OF THE ETHIOPIAN AIR FORCE

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DECLARATION

I, the undersigned, declare that this thesis is my work and that all sources of materials used for this thesis have been duly acknowledged.

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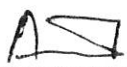
Signiture: 

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ABSTRACT

The purpose of this study was to develop criteria for course design in English for aircraft technicians of Ethiopian Air Force. In the work of developing criteria, the existing syllabus and materials were analyzed to see whether they were relevant to the needs of the learners for using English in their academic studies and job performance.

For this study, questionnaires were designed and distributed to 6 different groups: English teachers, academic and technical subject teachers, aircraft students, employers, aircraft maintenance shop supervisors, and junior aircraft technicians.

Interviews were conducted with English teachers and aircraft students to crosscheck responses obtained through questionnaires.

An analysis of maintenance manuals for aircraft engine and airframe, and of technical subject handouts was made to find out the most frequent communicative functions and notions students needed. An observation was also made on the maintenance work of the technicians to see what activities, which language skills, and communicative functions were actually used.

The basic criteria drawn up from the findings are that the syllabus should be topic-based while including sub-syllabus of functions and notions, skills, vocabulary and structure; the content should derive both from general and technical English; the materials should cover all the four language skills with emphasis placed in order of priority on reading, listening, speaking and writing skills, and the methodology should adopt a variety of more recent and suitable techniques for language learning, such as pair or group work problem-solving activities.

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CHAPTER ONE

1. Introduction

1.1 Statement of the Problem

In the past twenty five years, the teaching of English as a foreign language (EFL) has shifted its focus from a view of language as a grammatical system or structure towards a view of language as communication within which the use for which the language will be put in the eventual specialist studies or occupational requirements of a certain group of learners is given prominence and priority. The main motive behind this move towards specialization of courses is to enhance the cost-effectiveness of teaching English, that has been to produce more efficient learners able to carry out their target studies successfully, or more effective workers able to carry out their jobs as required.

Many educational institutions and training centres all over the world have thus developed courses which take an analysis of the required areas of language use and the overall communicative needs of their learners into consideration in order to provide teaching of English which is relevant and helpful to their students or trainees. Although this trend is very late in coming to Ethiopia, some encouraging preliminary attempts in this direction have been made by researchers here. Research on the identification of the communicative needs of Addis Ababa University students by Morris (1983), on the attitudes of students and teachers towards the use of ESP teaching materials in Addis Ababa Technical Schools by Haile Mehari (1989), and on the communicative needs of students in Ethiopian High Schools by Abiy Yigzaw (1989) show an endeavour to move towards the development of criteria for planning courses for specified aims, or English for Specific Purposes.

In the Ethiopian Air Force, English is taught to a range of students. The Air Force training centre has seven

different Schools: The Aircraft School, the Electronics School, the Radio Communication School, the Armament School, the Automotive and Power Plant School, the Management School and the Air Traffic Control and Weather Service School. All the seven different schools use the same English text books in English courses which are given for three semesters in the first and second years of study.

The current English materials are published by the Ministry of Education. They are English for New Ethiopia series, Grades 11 and 12. In the teaching, emphasis is put on developing knowledge of grammar and usage of general English. However, in addition to the inappropriateness of these materials to aircraft students, all the students enter the training after already completing twelfth grade. These students, thus, learn English in the training school from the same text books which they have used in their schools already.

Concerning the communicative ability of these who graduate from the aircraft school and begin the job, there are many complaints about their incompetence in reading and understanding their technical manuals. The question is: Are the current English courses for aircraft students helping them to develop the kinds of skills in English helpful for their job? How far is the objective of training aircraft students in English being realized?

In order for aircraft technicians to perform their jobs successfully in English, I believe that their communicative and learning needs should be analyzed and incorporated in the course design process so that this will facilitate the subsequent development of suitable methodology and production of suitable teaching materials.

The purpose of this study is, therefore, to investigate the communicative and learning needs of aircraft technicians at Debre Zeit Air Force Base, both their occupational and institutional needs, and to develop criteria for designing an

ESP course for these students of English.

1.2 Importance of the study

It is assumed that both trainee technicians and their sponsors can explain the reason why aircraft technician students come to learn English. The main reason they will probably give is that the English course should prepare the students for the future task of repairing an aircraft successfully using English. In other words, the English course given in the training school should equip the learners with the necessary skills and strategies to enable them to handle their future jobs confidently through exposure to the relevant content and learning situations.

But what the aircraft students at Debre Zeit Air Force base are learning in English now is not what they really need for their job. Currently aircraft students are studying on a syllabus and using materials intended for General Purpose English, i.e materials originally designed for school children. The sponsoring organization seems to appreciate the importance of technical English for its aircraft students. However, no measure has so far been taken to try to solve the problem by designing an English programme which satisfies the needs of the learners.

It is likely that the aircraft student technicians have a greater need for reading skills in English by comparison with other skill areas, since their major involvement with English is in interpreting technical manuals written in English. Thus, they are likely to need vocabulary development and reading strategies to cope with the manuals. Therefore, the teaching and learning process should promote the development of these and other skills and strategies. However, the current English syllabus and materials used at the training school do not consider these needs at all.

Not less than forty students every year graduate from

the aircraft training school. These graduates begin work with a knowledge of English grammar and vocabulary based only on the English for New Ethiopia (ENE) series. Therefore it is hardly surprising if they lack competence in reading skills and in particular in the ability to understand and interpret aircraft manuals for repairing an aeroplane as well as lacking competence in skills for communicating with other technicians using register appropriate to the aviation field. One of the main sources of these junior technicians' problems is likely to be the nature of English course given to them. Poor performance in English in the work situation is likely to be largely due to poor learning experience, which itself is the result of inappropriate teaching materials, irrelevant topics, and demotivating learning situations.

Thus, the importance of this study is that it aims to analyze and identify the communicative skills needed by aircreft technician learners at Debre Zeit Air Force Base, and the learning needs of these learners as determined by the learning situation, and aims to make future syllabus designers and materials writers aware of the importance of these factors and to provide them with a framework from which to design a syllabus and, ultimately, teaching materials.

1.3 **The scope of the study**

This study limits itself to the problems of aircraft technician trainees as students of technical subjects in the aircraft school and as future aircraft technicians in using English. The study attempts to examine the English language skills and knowledge needed by aircraft technicians for their job as well as their institutional needs so that the English course given to aircraft students during their training is designed according to these identified communicative and learning needs.

Although there are seven different schools in the Air Force, this study restricts itself to an investigation into

the teaching of English in the Aircraft School. The first reason for this is that it is not feasible to carry out research on seven different schools for different specializations. The second reason is that aircraft maintenance is the primary concern of the air force while other activities are viewed as subsidiary, and finally the researcher has a personal interest as a teacher in the school in establishing criteria for the development of a suitable English course for aircraft technicians.

The ultimate aim of teaching English in the Air Force is to prepare and enable students to perform the job of maintaining an aircraft successfully while operating in English. However, English is also used as a medium of instruction in teaching such academic courses as Physics, Maths, and Chemistry. More importantly, technical specialist courses, for example, "Theory of Engine" and "Theory of Airframe", are also taught in English. Nevertheless, the researcher will be treating the English course at this school to be primarily an English for Occupational Purposes (EOP) course, rather than an English for Academic Purposes (EAP) course. Thus, primary consideration is given to the needs of the target job and the needs of present language learning or learning needs in the sense of EOP while secondary consideration is also given in this study to the demands of students' specialist technical courses, since aircraft students study their technical subjects in English concurrently with as well as after the end of the English course, and the English course to some extent plays the role of an academic English programme (EAP).

CHAPTER TWO

2. Review of related literature

2.1 Introduction to the review

In this chapter issues relevant to the research outlined in Chapter One will be considered. To do this, a number of works related to the teaching of English for Specific Purposes (ESP) will be referred to.

This particular branch of English language teaching developed primarily in response to the discontent of certain groups of learners with language learning programmes that did not meet their particular needs. Writers as far back as Palmer writing in the 1920s, conceived of the idea of English for Specific Purposes. Palmer, for example, as discussed in Widdowson (1983), points out that it is not possible to design a language course unless something is known about the learner at whom the course is aimed. Palmer goes on to give some examples of the needs of different professions for relevant varieties of language. As he writes,

> *The clerk or merchant will specialize in the commercial language and learn how to draw bills of lading or to conduct business correspondence. The hotel-keeper or waiter will concentrate on hotel colloquial, as also will the tourist or tripper (Palmer in Widdowson 1983:14).*

This early idea of the value of ESP became more accepted in the late 1960s due to the ever increasing demands of technology and commerce, especially in the third world countries. Learners of English increasingly gave importance to particular reasons they had for learning English. Learning English for its sake, or for pleasure became only one of the possible areas of English study.

2.2 **Definition of English for Specific Purposes (ESP)**

Teaching English for Specific Purposes (ESP) emerged as a branch of English language teaching (ELT) in the hope that it would facilitate more efficient learning, and thus that the purpose for which English was required by learners would be more successfully achieved. It is, therefore, not a different kind of English, but rather an integral part of ELT.

However, although ESP has various features that may appear to distinguish it from General Purpose English (GPE), we cannot give a definition of it by looking at just one single aspect of it. For example, the acronym ESP can be explained as 'English for Specific Purposes', but this cannot tell us what ESP is in its full sense. Different writers define ESP by emphasizing one or other of its features.

For instance, Hutchinson and Waters (1987), define it through the opposition they have to the concept of ESP as a special language. ESP, as they see it, is an 'approach to language learning, which is based on learner need'. They proceed to define ESP through what ESP is not. According to them ESP is not just science words and grammar for scientists, neither is it just hotel words and grammar for hotel staff. But rather, it is English language teaching in which performance and competence (communication) receive the greatest attention. Thus, they say 'ESP is not different in kind from any form of language teaching' except in that it is used for a specific purpose, and in that there exists a particular context of use the learner is more likely to meet in his target situation. They argue that an employment of more effective and suitable learning principles and the use of contents from the learners specialist areas does not make ESP different from other forms of language teaching.

One fundamental concept on which there is a general

agreement is that ESP is concerned, as Munby (1978) says, with the communication needs of the learner or learner need. Kerr, in his article, "English for Special Purposes" in 'English for Specific Purposes' edited by Holden (1977) defines ESP in terms of learner purpose or the ends that one seeks to achieve in the teaching, which is one aspect of learner need.

According to Munby (1978) ESP is distinguished from general purpose English in the sense that GPE is based on predetermined goals set by a teacher or an institution whereas ESP is defined by prior analysis of the communication needs of the learner. Widdowson (1983) also agrees generally with the definition given by other writers. However, he doesn't accept the mere existence of 'purpose' as being sufficient to define ESP and distinguish it from GPE. He says it should be rather the way purpose is defined that distinguishes ESP from GPE, that is, he is concerned with the definition of ESP in terms of goals of learning.

He explains this by making a distinction between ESP as a training operation, whereas GPE as an educational operation:

> ...As generally conceived, ESP is essentially a training operation which seeks to provide learners with a restricted competence to enable them to cope with certain clearly defined tasks. GPE, on the other hand, is essentially an educational operation which seeks to provide learners with a general capacity to enable them to cope with undefined eventualities in the future (p.6)

According to Strevens (1980), the following are the working definitions of ESP:

> ESP entails the provision of English language instruction;
> 1. Devised to meet the learners' particular needs;

ii. Related in themes and topics to designated occupations or areas of study;

iii. Selective (i.e not general) as to content;

iv. When indicated, restricted as to the language "skills" included (pp. 109)

In this case Strevens defines ESP as being primarily concerned with content and skills.

One contemporary and interesting definition of ESP is to view it as a learning centred approach to English language teaching, as discussed in Hutchinson and Waters (1987) in detail. This is a new issue in ESP teaching and one which has emerged in opposition to the earlier rigid target or goal-oriented definition. It is a definition of ESP in terms of both target and learning needs, which pays more attention to affective as well as cognitive factors.

So far an attempt has been made in this paper to define ESP through those different features of it considered most prominent by different writers. English for Specific Purposes is generally understood in terms of its consideration of learner need as a central concern around which other elements revolve. In short, ESP involves the design and teaching of an English programme based on the needs of the learners and the learning situation and aiming to help the learners to cope with their target studies or jobs, or to communicate successfully in English for their study or job purposes.

2.3 **The Development of ESP**

According to the works of many scholars, there are three important causes for the emergence and development of ESP: the expansion of science and technology, a new focus on the language learner, and a revolution in the field of linguistics.

As Hutchinson and Waters (1987) write, there occurred a

massive expansion of endeavour and advancement in science, technology and commerce after the Second World War. This technological advancement demanded an international language (English) in order for people to carry out their business on a worldwide scale. As a result, people tended to learn English as a way to helping them to improve and do their business more successfully. This caused the teaching of English for Specific Purposes (ESP) to evolve.

> *...as English became the accepted international language of technology and commerce, it created a new generation of learners who knew specifically why they were learning a language, business men and women who wanted to sell their products, mechanics who had to read instruction manuals, doctors who needed to keep up with developments in their fields. (Hutchinsom and Waters 1987: 7)*

The second force that brought about the rise of ESP was the discontent of many learners with general English courses which didn't meet their particular needs. Thus, a focus on the learner, that is, consideration of the learner and his needs and interests enhanced the growth of ESP teaching. For example, developments in educational psychology have emphasized learners and their attitudes as an important factor for learning. To this end, as discussed in Hutchinson and Waters (Op. Cit), relevance of content to the students' field was believed to sustain their interests and motivation which in turn would result in better learning.

This major issue of students' dissatisfaction with general English programmes and consideration of the needs of the learners as an influential force for the emergence and development of ESP is discussed in depth, for example, in Strevens (1971) and Wingard (1971) as cited in McDonough (1984), Bhatia (1986), in Peterson(ed.1986), Richards and Rodgers (1986), Tinkham (1987) in Willmott (1987), Hutchinson and Waters (1987), and many others.

The third impetus that helped ESP to enrich its

theoretical basis in terms of a working view of language was research work in sociolinguistics which resulted in a view of language as communication rather than as grammatical structure. Many ESP syllabus designers and materials writers have made use of this theory of language so as to introduce a communicative approach to the teaching of ESP. As discussed by Hutchinson and Waters (1984) in ELT Journal 38/2, for example, ESP and the communicative approach are closely related.

Having emerged as the result of the above forces, ESP has passed through certain phases of linguistic innovations. According to Hutchinson and Waters (1987), there have been five phases of development. The first phase centred on register analysis. This was characterized by a view of ESP which emphasized the analysis of linguistic features more frequent to a given context of use. A Course in Basic Scientific English (1969) by Ewer and Latorre is a typical example of an ESP syllabus and materials based on a view of ESP as determined by register analysis. In this text Ewer and Latorre listed language forms like simple present active, passive, infinitives and so on and specialist vocabulary items that were believed to belong specifically to scientific registers and were assumed to be sufficient to meet the needs of science students although they were not very distinctive from language forms in general English. Moreover, the methodology was based on analysis and manipulation of structural patterns in which learning of vocabulary was not illustrated in context or discourse in general.

The second phase of development of ESP was strongly influenced by developments in discourse analysis. Syllabus and materials typical of this phase were concerned with the need to teach the learners how meaning was produced through the combination of sentences in discourse. The work of Trimble is closely associated with this period of ESP. The assumption was that different science texts or subjects exhibited specific rhetorical structures. However, this approach had its own drawback. Although it made learners

aware of discourse patterns, it could not account for how those patterns created meaning.

The third phase of development identified by Hutchinson and Waters (1987) focused on target situation analysis. The main focus of ESP work of this period was on the analysis of the linguistic features which the learners would use to communicate different purposes and the situations in which these items of language would be used. Munby's work(1978) is closely associated with this. While Munby's work has been of lasting significance, it has been criticized for being too rigid and for not taking into account the needs of the learning situations.

The fourth phase of innovation was, according to Hutchinson and Waters, characterized by skills- centred approaches. This stage was seen to be different from the preceding ones in that syllabuses and materials that were skills-centred emphasized the importance of developing interpretive skills and strategies that underlie language use rather than merely teaching the surface forms. This idea has its origin in the needs of students to read their specialist texts which were only in English and required skills and strategies to interpret and extract meaning. Guessing the meaning from context is an example of such strategies.

> *The principal idea behind the skills-centred approach is that underlying all language use there are common reasoning and interpreting processes, which, regardless of the surface forms enable us to extract meaning from discourse. The focus should rather be on the underlying interpretive strategies, which enable the learner to cope with the surface forms (Hutchinson and Waters 1987:13).*

Hutchinson and Waters characterized the fifth phase of development of ESP as a learning-centred approach. While the earlier developments or approaches were concerned with descriptions of language use, the learning-centred approach

is primarily concerned with language learning. That is, it is not interested in showing merely how people do things with language, which is insufficient to learn the language, but rather it is interested in how people learn, with the prime aim of helping learners to acquire the competence that will enable them to perform in the target situation. In other words, a learning-centred approach aims at prioritizing the process of learning to equip learners with long lasting strategies which they can use for handling their studies or job successfully after the end of the ESP course.

Although earlier works in ESP have been criticized for their focus being only on certain limited aspects, the above discussed phases of development in ESP have all made a contribution to contemporary course design and they can all be viewed as complementary. In other words, it is obvious that subsequent developments in ESP course design can benefit from all these preceding views. For example, register analysis based syllabuses still have some relevance for contemporary course design, because an analysis of target language features is still an important aspect of ESP. So, each phase of development, viewed in terms of its value for contemporary course design, has both useful and weak points.

Therefore, regarding the development of an English course for aircraft technicians at Debre Zeit Air Force Base, the writer of this research does not believe that only one single model of course design can or should be used as a sufficient criterion for an English course for aircraft technicians. The researchers belief is that since an awareness of language functions, notions, and lexical items with appropriate structural exponents and the ability to use sub-skills or micro-skills relevant to the four macro skills are all likely to be important for the technicians in their interpretation of work manuals, any appropriate course design should be based on criteria developed through taking relevant ideas from all phases of ESP development. For example, the syllabus could be primarily topic - based or skill-based with functions and notions being incorporated as sub- syllabuses.

2.4 Branches of ESP

An attempt has been made in the preceding sections to define ESP and to discuss its development in brief. In this section, the major branches of ESP will be looked at.

There are a number of ESP branches in the field of science and social studies and professional training. Among these branches are English for Business and economics, English for Secretaries, Waiters, Scientists, Diplomats, Doctors, Pilots, and Technicians (Strevens 1977:90). However, there are two major branches in ESP: English for academic purposes (EAP) and English for Occupational Purposes (EOP).

As the acronym itself implies, EAP is the name given to English courses designed usually context specifically for students to help them pursue their academic studies in English better. The belief behind EAP is that academic service English courses will enable these learners to cope better both socially and with their specialist texts. Therefore, one of the criteria for course design in this context is derivation of content or topic areas from those students' academic courses and related specialist texts in general, provided that the texts are worth using for language learning purposes in classrooms, as pointed out by Hutchinson and Waters (1982) in Lancaster Practical papers in English language education, Vol. 5. Because it is believed that, for example, a text may be a good description of an aspect of a given specialist area of study but it will not necessarily make a good text for language learning purposes. Any input for language learning purpose should be chosen because it will generate useful work in the classroom, not because it has the apparent authenticity of the target situation (Op.Cit). As Robinson (1991) writes, the current concern is with 'studying in context', that is, with identifying the social as well as academic requirements of a particular situation and equipping students to cope (p. 66).

EAP therefore primarily takes place in a tertiary educational setting where students learn English either before specializing their studies (pre-study) or as part of their studies (in-study) ESP. Munby (1978) clarifies this point:

> *A Turkish student in the preparatory department... who is studying English is an example of pre-study discipline-based ESP. A Mexican, student in the facul ty of veterinary science at the national univer sity of Mexico, who is studying English in order to read books and articles on his subject that are written in English, is an example of in-study, discipline-based ESP (p .57)*

Another important branch of ESP is known as EST (English for Science and Technology). ESP and EST are often conceived of as being synonymous, although they are not actually. Similarly, many writers have not made a clear distinction between EAP and EST. They typically take EST to be a branch of EAP, rather than EOP. For example, Strevens (1977), McDonough (1984), and Kennedy and Bolitho (1984) define EST in general as an English course that teaches scientific English to scientists, although they accept the fact that ESP owes a great deal to EST for its development. Trimble (1985), however, gives a clearer description of the relationship EST has to EAP and EOP. He says EST is related to both EAP and EOP in that a student of engineering (EAP) and an engineering technician (EOP) share EST knowledge except in theory and practice. But what most writers have agreed on is that EST aims at teaching scientific English to scientists and technologists. For most writers this implies designing English courses within which macro and micro skills, vocabulary items, grammatical forms, and notions and communicative functions found frequently in the scientists' study or job are given prominence.

The other major ESP branch is English for Occupational

Purposes (EOP). This is the teaching of English to prospective workers. An EOP course is basically a training course in which learners learn the English they will need to perform their future jobs. The learners may need emphasis on speaking skills or on reading skills or on other skills in English to carry out their duties, depending on the nature of their job. Kennedy and Bolitho (1984) discuss this point by saying,

> *EOP is taught in a situation in which learners need to use English as part of their work or profession. Instances of EOP students would be doctors in casualty or technicians servicing equipment. They need English, in the first case, to talk and respond to patients and other staff, and, in the second, to read technical manuals (p.4)*

Learners who come to an EOP situation are either those who have already experienced the job and want to develop some additional relevant English skills, who may be called in-experience ESP learners,or those who are learning English concurrently with learning the job itself and who can be called pre-experience ESP learners.

Thus, the Air Force Aircraft students are considered in this study basically to be EOP learners, and EAP learners for their time in training. What makes these learners need an EOP course is that they are being trained in English to carry out their eventual job of maintaining an aircraft in English.

2.5 **Needs Analysis**

Needs are the requirements learners have for their academic studies or for jobs for which they are being trained, and the learning requirements for attaining those academic or professional goals. Assessing these needs is called needs analysis. For example, as Tarone and Yule (1989)

write, needs analysis is a task of collecting and evaluating information to answer the question as to' what aspects of the language' a particular type of learner needs (p. 32).

More specifically, contemporary ESP works view a statement of the needs of learners of a particular group as being best achieved through agreement and negotiation among all the parties considered; teachers, learners, employers, syllabus designers, etc., considering both the subjective and objective needs as opposed to needs assessment characterized by earlier ESP models in terms of target needs (objective needs) alone.

Munby's model, for example, views need as an objectively determined reality, as pointed out by Holliday and Cooke (1982:131) while in recent developments learner need is viewed to mean more than this. Therefore, there are various views of what constitute 'needs'. Firstly, needs may be defined as an analysis of students' study or job requirements, or what the learners need to do at the end of the course with the language (a goal-oriented definition of needs). Secondly, needs may be defined in terms of the perception of the institution, i.e. what the institution considers necessary for students to learn. A third view of needs is what the learners actually have to do in order to learn the language (a process-oriented definition of needs). A fourth view of needs relates to the learners' personal aims, that is, their needs, lacks, and wants. This takes as its starting point what learners do not know or cannot do with language (lacks) and their need to bridge this gap (Robinson 1991;7-8).

ESP and needs analysis are generally seen as inseparable. For instance, the work of Trim et al. *Systems Development in Adult Language Learning (1980)*, Richterich and Chancerel *Identifying the Needs of Adults Learning a Foreign Language(1980)*, Van Ek and Alexander *The Threshold Level English (1975)* and others have been based on the results of needs analysis, although many writers at the same time

complain about incomplete analysis of needs in most earlier ESP works, that is, an emphasis on goal-oriented target situation analysis and a negligence of the present learning situation or learning needs analysis.

2.5.1 **Target Needs Analysis**

A target needs analysis is a needs analysis which focuses on students' needs at the end of a language course (Robinson 1991:8). So, it takes into account the situations in which the learner will use the language and the kind of language forms or communicative functions necessary for him to be able to use in these situations.

Hutchinson and Waters (1987) discuss this point from the same standpoint as Robinson (Op. Cit) in that they view target needs in terms of necessities, lacks, and wants. By "necessities" is meant the type of needs determined by the target situation, that is, what the learner is required to acquire so that he can successfully perform the job in the target situation. Necessities may include language forms, communicative skills, and so on, depending on the nature of the course. By lacks, on the other hand, as pointed out above, is meant the difference between what the learner already knows and the necessities identified. Thus, "lacks" refer simply to those aspects of target necessity which the learner cannot cope with at the present, while "wants" are the learner's view of his needs as opposed to views perceived by teachers or course designers.

The learner has his subjective needs and interests, and may want to learn other things (skills) in addition to what has been set by the institution.

However, Hutchinson and Waters (Op. Cit) take the target needs analysis to be only a partial needs analysis, as it ignores any learning situation or learning needs analysis, which the present study is taking into account. The idea that

a target needs analysis represents only part of a full needs analysis is accepted by recent writers, for a target situation analysis corresponds only to an end-product or goal-oriented definition of needs disregarding the means or process-oriented interpretation of needs. For example, Bloor (1984) says that,

> *In order to specify an adequate teaching syllabus, it is almost certainly desirable to operate both target-centred and learner centred needs analysis* (Bloor 1984:17)

By learner-centred needs analysis she means an assessment of what the learner can bring to the ESP course as skills to direct his learning, or the problems that might hinder his own learning.

Holliday and Cooke (1982) in their "An Ecological Approach to ESP" advocate means analysis or process analysis which considers all the factors related to the learning environment, which the product oriented model (Munby's 1978) failed to account for. Similarly, Hutchinson et al. (1979) criticize the Munby-style target situation analysis for placing emphasis on surface or performance features and examining the end but not the means (an underlying competence).

> *The analysis of the target situation, then, should begin by distinguishing the Target Performance Repertoire from the Underlying Competence. Each of these should then be examined* (Hutchinson et al. 1979: 152)

The point in their argument is that prior analysis of the target performance features does not provide sufficiently broad data for establishing criteria that will enable the learners to develop the underlying competence to interpret or express texts or discourse related to the target study or job, but rather, it is the underlying target competence that

the learner brings to the classroom or learns that enables him to interpret the texts in target situation.

Similarly, Widdowson (1981) in Selinker et al. (1981) in his article, "English for Specific Purposes: Criteria for Course Design" criticizes the views taken by Halliday et al. (1964), Munby (1978), and Wilkins (1976) towards target situation analysis as the only means of identifying needs. As quoted by Widdowson, Halliday et al. say:

> *" It is perfectly possible to find out just what English is used in the operation of power stations in India: once this has been observed, recorded and analyzed, a teaching course to impart such language behaviour can at last be devised with confidence and certainty"* (Halliday et al. 1964:190)
>
> (Widdowson 1981:1-2)

To show a similar stand taken by Munby (1978), Widdowson quotes the following:

> *"... When the purpose for which the target language is required can be identified, the syllabus specification is directly derivable from the prior identification of the communication needs of that particular participant or participant stereotype "(Munby 1978:218)* (Widdowson 1981:2)

Widdowson similarly gives the following extract from Wilkins (1976):

> *The process of deciding what to teach is based on considerations of what the learners should usefully be able to communicate in the foreign language. When this is established, we can decide what are the most appropriate forms for each type of communication...* (Widdowson 1981:3)

Widdowson's criticism of these writers is that they are considering target situation analysis alone as the criterion for course design, and target needs as the only needs of the learners in learning language. In other words, he criticizes the writers' neglect of learning needs and process-oriented learning needs analysis and asserts strongly that an analysis of learning needs must be undertaken if one is to base an ESP course on sound criteria. Therefore, according to Widdowson (1981), Hutchinson and Waters (1987), Hutchinson et al. (1979) and many other recent writers in the area of ESP programmes, course design criteria must be based on a needs analysis that takes into account both target situation analysis and learning needs analysis.

As Robinson (1991) points out, a target situation analysis may consider two stages in the students' learning. She says, thus the English course may be preparing the students for a further training course, which will be conducted through the medium of English, after which the students will then take up jobs. Although the training course and the later job are different in their English language requirements, both need to be considered in the language course.

This point is quite relevant to the present study. In this study, therefore, an enquiry is being made into the learners' target needs in both their technical training courses in English and in their later job situations. One way in which this is done is by assessing target language requirements (notions, functions, skills, etc.) from the learners' technical subject course handouts and work manuals. Similarly, the aircraft students may be expected to have a need for taking notes from books, for writing test answers etc. during their technical subject courses and also for developing reading and writing skills for their future jobs. All these are being considered in the study now and should be considered in designing the ESP course which it is hoped will be based on the criteria developed as the result of this study.

2.5.2 Learning Needs Analysis

Learning needs analysis, also called "present situation analysis" by writers like Robinson (Op. Cit), investigates the strengths and weaknesses the students bring to the English course. Richterich and Chancerel (1980), as cited in Robinson (Op. Cit) propose three sources of information: the students themselves, the teaching establishment, and the user-institution, for example, the students' place of work. Here, information about the learners' level of ability, technical resources, and their views on language teaching and learning is gathered and analyzed.

It has been argued above that consideration of both target needs and learning needs can provide course designers with a more complete needs analysis. In other words, there is agreement among writers on the importance of identifing both the language or communication needs of the learners and the means which enable learners to achieve the ends of learning.

Among the proponents of learning needs analysis are Hutchinson and Waters (1987). They argue that a target situation analysis cannot indicate how the expert communicator learnt the language items, skills, and strategies that he or she uses. They further argue by saying that:

> *It is naive to base a course design simply on the target objectives, just as it is naive to think that a journey can be planned solely in terms of the starting point and destination. The needs, potential and constraints of the route (i.e the learning situation) must also be taken into account, if we are going to have any useful analysis of learner needs (p. 61).*

This idea of learning needs is defined in different ways

by different writers, but with the same concept. Hutchinson and Waters (Op. Cit) define it briefly as what the learner needs to do in order to learn'. Widdowson, in Selinker et al. (1981) defines it similarly as 'what the learner needs to do to actually acquire the language', which is a process oriented definition of needs, or as Brindley (1989), in Robinson (1991), states they are the 'cognitive and affective needs of the learner in the learning situation'.

In general, although the earlier goal-oriented ESP works have been criticized for considering target needs alone as criteria for course design and materials development and ignoring the present learning needs, the contemporary view on ESP considers the combination of the target situation analysis (goal) and present learning situation analysis (means) as complete learner needs to base an ESP course. Therefore, the present research has been designed in this spirit.

This study is using both target situation analysis and learning needs analysis in its needs analysis stage to find out the needs determined by the target situation and needs felt by the learners, to see the contribution that learners bring and that they can make to the learning process. The belief behind paying attention to both types of needs assessment is that learners' motivation cannot derive only from more provision of sample language forms in extracts from their work manuals, spoken discourse, and technical log books, but will also derive from the learning situation, from relevant and interesting learning tasks, techniques and methodology which are suitable for learning the language. As Hutchinson and Waters (1991) argue, " EST materials need to be intrinsically motivating and can not rely solely on the motivation produced by the target situation" and "people learn best when their interest is engaged".

The target situation analysis is considered equally essential in that target need must be an influential factor in the language course design process. Aircraft students need

to learn at best a substantial part of their English course through topics which have relevance to their future jobs, and which develop those skills and communicative performances they need in order to handle their technical studies and future jobs, and also to create some motivation in them while learning the language at present.

2.6 Syllabus

In any course design process, developing a syllabus is a necessary component. The term syllabus is defined from different points of view by different people. For example, for Strevens (1977), a syllabus is partly an instrument for adminstration, partly a daily guide to the teacher, partly a statement of what to teach and how. He says it is a document in which the items to be taught are listed in a particular course for a particular set of learners (p. 25). Richards (1985) says that a syllabus represents a particular view of what is needed to attain an objective (p.8). Here he means a syllabus also reflects the means through which learning is achieved.

A more elaborate definition of a syllabus is given by Dubin and Olshtain (1986), who says a syllabus is the vehicle that conveys the information from policy makers to teachers, textbook writers, examination committees and learners.

Whatever it is called, it is a document which ideally describes;

1. *What the learners are expected to know at the end of the course, or the course objectives in operational terms.*
2. *What is to be taught or learned during the course in the form of inventory items.*
3. *When it is to be taught, and at what rate of progress, relating the inventory of items to the different levels and stages...*

4. How it is to be taught, suggesting procedures, techniques, and materials (p . 28).

Similarly, Widdowson (1990) views syllabus as the specification of a teaching programme or pedagogical agenda which is concerned with a particular group of learners (p.127).

2.6.1 Early approaches to syllabus design

The most familiar type of language syllabus for many students and teachers is the grammatical syllabus. However, although it has been the most influential syllabus in English language teaching for many years, in Ethiopia in particular both at high school and tertiary levels, it has been criticized for its inadequacy in that it does not lead to teaching that enables learners to use English in real communication. In other words, it fails to teach students the meaning and uses of language, or the skills and strategies through which they can acquire language so that they can communicate appropriately.

In this respect, Wilkins in Brumfit and Johnson (ed. 1979) says,

> *The grammatical syllabus, however, is not without its critics... It is very difficult for many learners to appreciate the applicability of the knowledge they gain through such an approach. The process of being taken systematically through the grammatical system often reduces the motivation of those who need to see immediate practical return for their learning (pp. 82-83).*

Wilkins goes on to discuss the failure of the grammatical syllabus to equip the learners with communicative competence. Similarly, according to Allen and Widdowson, in Brumfit and Johnson (Op. Cit) difficulties faced by students learning from a grammatical syllabus arose from the learners'

unfamiliarity with the use of English, rather than from an inadequate knowledge of grammar. The situational syllabus was an attempt to deal with these short comings.

The main feature of a situational syllabus was an analysis of the situations in which students would need to use the language, and the design of course materials on the basis of such an analysis to enable the learners to use the language appropriately in a context. Wilkins in Brumfit and Johnson (Op. Cit) said that language shouldn't be separated from the context and he saw this syllabus as a learner-base syllabus. He added that 'The situational syllabus, therefore, is based upon predictions of the situations in which the learner is likely to operate through the foreign language' (p. 83).

However, the situational syllabus was criticized in two respects. First, it was argued that it was not possible to predict language fixed in a particular setting. Second, it was argued that it still emphasized language as a set of grammatical structures. So, the difference between the grammatical and situational syllabuses appeared to be cosmetic: merely 'what' to teach in the former and 'where' and 'when' to teach in the latter. These inadequacies gave rise to other syllabus types, specifically the notional functional syllabus.

The development of functional notional syllabuses was encouraged by the work of Council of Europe's modern language teaching project by Trim et al. (1980) and others and work in discourse analysis by Widdowson (1979), Candlin (1976), Trimble (1985) and their colleagues. The aim of such syllabuses is the prioritization of the meanings or notions that people communicate through language, and the use or function of the language. These three kinds of syllabus have all in their own time been influential in General purpose English teaching as Well as in ESP.

2.6.2 More recent approaches to ESP syllabus design

It is now generally accepted that the aim of an ESP course should be to teach the learners both the communicative abilities required of them for their target study or job, and the skills and strategies which will help them to develop those abilities. This view is currently widely held and has arisen as a result of the failure of teaching based purely on grammatical, situational or functional notional syllabuses on their own to equip learners with the communicative abilities, skills and strategies needed for the learners' target specialist studies or work. So, in this section I am going to discuss very briefly more recent trends in ESP syllabus design.

The fundamental differences between early and more recent ESP syllabuses lie in the organizing principles and in the selection of the content. In a grammatical or register analysis ESP syllabus, the basic selection and organizing principles were 'frequency' 'coverage' and 'availability', etc., while the content is language form. In a similar fashion, a situational ESP syllabus is based on situations and appropriate language forms for those situations, the content still being language forms. A functional notional syllabus is based on selection of the most useful functions and notions with appropriate exponents in the form of structures and vocabulary.

However, the selection and organization in more recent examples of ESP syllabuses are based on a broader identification and analysis of the learners' needs and the needs of their learning situation. The content is typically a balance of language use (function, notation, vocabulary), language skills, and strategy awareness training or activities or tasks or some other balance of sub-syllabus as the needs of the learners demand, but not primarily language forms.

Recent and early ESP syllabuses are thus different at least in two ways: in selection and organizing principles, and in content.

This is not to say that form and function are two mutually exclusive elements in a syllabus. In fact one cannot exist in a course without the other. For example, Widdowson (1990) argues that the difference between the structural and notional functional (ESP) syllabuses is in the means they employ to attain the goal, but not in the end, the eventual communicative purpose. Both can be used to prepare the learners for future communication in the language, through linguistic investments by structural syllabus and performance accumulation by notional functional (ESP) syllabus, respectively, as Widdowson (1990) points out.

Similarly, Dubin and Olshtain (1986) advocate a combination of different inputs to syllabus design in an eclectic manner to obtain positive results (p. 38). Regarding the structure and function of language in the activity of language learning, Johnson (1982) offers the 'separationist' and 'unificationist' views. He suggests the teaching of structure first, followed by use, and teaching communication from the beginning with the structure, respectively 'separationist' and 'unificationist'. The point is that one syllabus type doesn't totally replace the other since the structure aspect cannot exist without the function aspect of the language and vice versa although one can change the emphasis.

2.6.3 Product and process in ESP syllabuses

So, as we have seen in the development of ESP, there have been broadly two perspectives in teaching English. As discussed by Hutchinson and Waters (1987), these perspectives are describing 'what' people do with language and 'how' people learn to do what they do with language.

Earlier ESP syllabus types focused on describing sentence grammar and meaning. All these ESP syllabuses had one important drawback in their views of teaching the language. The question as to how students would learn what they needed to learn was neglected. They all focused on a product language knowledge, usage or use. These earlier approaches have thus been seriously criticized for their neglect of how people learn, or the learning process, by writers like Widdowson (1981) in Selinker et al., Hutchinson and Waters (1987), Robinson (1991), and many others. Current ESP syllabus may, nevertheless, still be described as existing on a continum from product or goal-oriented syllabus to processes syllabus or means-oriented syllabus

2.6.4 Product syllabuses

Both White (1988) and Hutchinson and Waters (1987) describe ESP syllabuses as more or less product-and content-based or as more or less process-and method-based while on the continuum between the product-and process-syllabuses they place skill-based syllabuses.

In a product-syllabus, language forms, functions, situations or topics are taken from the learners' target specialist or job areas, analyzed and arranged as teaching items. The aim of a product-syllabus, whether grammatical situational or functional, is thus an end product, because the learners are expected to know the items taught to them and store them in their minds to make use of them at the end of the course, which is in its view of teaching a typical example of a language syllabus used by the Ethiopian Air Force Training School. Widdowson (1981) regards this product view as 'a collection of formal or functional units to be stored away in the mind as knowledge' (p.5), a view which is likely to conflict with the learners' own internal syllabus and to cause less learning. On this point Hutchinson and Waters (1987) say '... we should address ourselves, in the first instance, to the problem of creating a sound and

effective learning environment. Unless this is right, all the linguistic analysis in the world will not help the EST learner get the knowledge he needs (p. 3)

A second kind of ESP Syllabus is a skills based syllabus, which may be viewed as a half product and half process syllabus. It may be viewed as a product-syllabus when a certain English course aims at teaching a specific language skill, for example, writing business letters or speaking for business people.

It may be viewed as a process syllabus when sub-skills applicable to more than one language skill are used as the basis for course design. As Robinson (1991) puts it, 'deducing gist' can be employed for both reading and listening. Although many skills-based syllabuses focus on one of the language skills, eg. on reading, I think the most interesting potential in ESP syllabus design is to base the syllabus on training micro-skills or sub-skills and related strategies relevant to more than one macro skill, so that learners will be able to make use of these micro skills in different macro skills to focus on learning skill development and to handle their specialist studies or job.

2.6.5 Process syllabuses

Widdowson in Selinker et al. (1981) advocates a process approach to course design. He says a goal-oriented approach focuses on what the learner needs to have acquired after learning while a process-approach focuses on 'what the learner needs to do in learning'. Widdowson argues that the language data given to the learner should not be preserved 'intact' but should be used as 'grist to his mental mill', as is practised in a goal-oriented approach. Like Hutchinson et al. (1979) and Hutchinson and Waters (1982), he says that the language taken from the learner's target situation shouldn't be what the learners will put in use after learning, but rather should activate strategies for learning and show some

relevance to their purpose. Frydenberg (1982) also argues for the importance of students' application of their skills or strategies to new material, and sees no value in dependence only on the knowledge of language data actually learned in classroom.

In Hutchinson and Waters (1987) it is claimed that 'ESP by its very nature' is a process that is intended to enable people to achieve a purpose (p.70). In this respect, Holmes (1982), as cited in Hutchinson and Waters (Op.Cit) writes;

> *The process-oriented approach... is at least realistic in concentrating on strategies and processes of making students aware of their own abilities and potential, and motivating them to tackle target texts on their own after the end of the course... (p.70).*

One of the main proponents of a process syllabus, Breen (1984), offers a thorough discussion of this syllabus type. He considers all syllabuses to have emphasised knowledge of what performance is like. What he alternatively advocates is an emphasis on the capacities required of a communicator, the learner. The focus should be on the process of learning rather than on content for learning. He argues for the prioritization of the route or the means over the predetermined objectives. The key feature of this approach, according to him, is a redefinition or negotiation between students and teachers on the predetermined syllabus to arrive at or produce a new or 'real' syllabus.

Hutchinson and Waters (1987) also emphasize ways of gaining competence rather than performance repertoire. Process syllabuses on the whole focus on developing the styles and strategies of good language learners.

Another method based syllabus closely related to the process syllabus is the procedural or task syllabus, the best example of which is the work of Prabhu (1987). As Robinson

(1991) discusses, this kind of syllabus consists of a set of tasks or activities, and class time is devoted to performance in which students work to understand and complete the task without acting mechanically.

In this regard, Johnson (1982) describes Prabhsu's central hypothesis as 'structures can best be learned when attention is focused on meaning', that is when the primary attention is paid to performance of a task rather than to the language needed for the task (pp. 135-136). Wilson (1986) as cited in Robinson (1991) says, similarly, that the starting point for the syllabus is a set of objectives that define the terminal behaviour required of the students followed by intermediate objectives that enable learners to attain those terminal objectives. Such an approach is also believed to be significant for ESP 'since the basic need of ESP students is' to successfully perform a work or study task.

As argued by Hutchinson and Waters (1987), although the ESP syllabus must be influenced both by the target situation and by the learning situation, the methodology 'must be considered right from the strat' in the syllabus design, in the learning centred approach to course design. Robinson (1991) similarly points out that a key feature of method based syllabus is that the distinction between syllabus and methodology to some extent disappears'. A syllabus of this type 'is used creatively as a generator of good and relevant learning activities', and 'at the same time maintains relevance to target needs and serves the needs of the students both as users and as learners of the language' (Hutchinson and Waters 1987:93-94). However, the ESP course emphasizes not 'achieving a particular set of goals' but rather enabling the learners to achieve what they can with the given constraints' (Op.Cit p.70).

So far, an attempt has been made to note types of syllabus and their fundamental views in regard to teaching English. Here, an issue of the choice will be seen in short. As has been noted above, there are many syllabus type

possibilities, ranging from those which may be described as goal-or product-oriented (language or structure, function and notion, topic or situation) to those which may be described as method-or process-oriented (skills and strategies, activities or tasks). That is, there are various options for an ESP syllabus and all types may be used having one type as an organizing device.

One approach or syllabus type may be more suitable for a certain learning situation than others.Theme-or topic-based syllabuses are currently common in ESP and many believe them to be highly appropriate for ESP since they use the content of students work or specialist study, and it is argued this motivates the students. A procedural syllabus is also accepted in some learning situations as a useful syllabus type for ESP learner since their need is to successfully perform tasks in English in their work or study.

However, in discussing which syllabus to choose, Swan (1985) in Robinson (1991) argues for an integration of eight or so syllabus types 'into a sensible teaching programme' rather than neglecting earlier approaches. Hutchinson and Waters (1984) in this respect are concerned to show that there is a language syllabus in *Interface* that matches or suits a range of other courses.

Therefore, as Robinson (Op.Cit) puts it , we need to consider all approaches available, and to 'find what is most suitable for a particular situation'. Any decision as to which syllabus to employ will result from an assessment of the target and learning needs and the objectives of the course. In doing this, factors such as what is already known about students' needs, motivation, expectations, abilities, what is feasible, acceptable to teachers institutions, etc., will all have to be seriously considered.

This whole debate has a clear relevance to the present study, since the present study is considering both the learners' target and learning situations in the course of

developing criteria for course design. Thus, I am interested in finding out whether a more process-oriented syllabus may be more appropriate for an English course for our aircraft technicians, than a more product oriented approach while at the same time keeping in mind the technicians' terminal goal, or target performance in the job.

I shall be interested in finding out which skills and strategies the technicians need to develop to cope with their training courses as well as their later job as I consider this may be more relevant than merely expecting them to learn a discrete set of language items (grammar, vocabulary, function, etc.) and use them at the end, which is what a strongly goal-oriented approach prioritizes. Furthermore, I shall be trying to determine whether a modified process or method-based approach based on topics or themes and emphasizing the development of strategies for improving skills and sub-skills will be more feasible to implement than a procedural syllabus given the current expertise of teachers, learning experience of students, the expectations of teachers and learners regarding how the learning should be conducted.

CHAPTER THREE

3. Issues to be Addressed

In this section background information will be given about the existing learning situation, teaching approach and materials used in the Air Force Training School. Issues considered in the present investigation, with the aim of enabling the investigator to arrive at suitable criteria for a course design for the Debre Zeit Aircraft School, will then be discussed.

In the Ethiopian Air Force Aircraft Training School, students learn English from an English syllabus whose contents are entirely language forms. That is, it is a totally language based, heavily grammatical syllabus. The target aim of learning English in this school may be taken to be successful performance in maintaining an aircraft using English. However the current English teaching programme in the Air Force doesn't pay attention to the means that will enable the learners to attain the end of learning.

The materials or textbooks, Grade 11 and 12 English for New Ethiopia (ENE) series, emphasize grammar rules, vocabulary meanings, and extracting information from passage readings. They are devoid of any teaching of skills and sub-skills of listening, speaking, reading, or writing. The materials are not supported by any teaching aids like tape recorders, videos, language laboratory, etc.

The methodology that is typically employed is not communicative in any sense. That is, the method most commonly employed is lecture based and teacher dominated. The learning tasks or activities are limited to answering questions from the reading passages, most involving extracting given information; answering questions about the correct use of grammar and the meanings of vocabulary items. Thus the reading tasks do not train students to become effective

readers, while using maintenance manuals or subject texts. The language exercises typically involve only mechanical grammar practice. The written tasks are mostly performed individually. Whole class activity is sometimes carried out for the purpose of correcting errors committed in structures and vocabulary meanings in class. Pair or group work is seldom or never used. Therefore, methodology used in the Air Force school in my experience doesn't in any way make use of more recent methodological perspectives or principles for language teaching and language learning. For example, the English course does not consider the value of pair/group work as modes of organizing the class. It does not include problem solving activities which are more likely to be relevant to the learners' field of specialism and to motivate them. In addition, opportunities are not given for students to carry out role plays, simulations or give oral or written presentation, etc., as learning techniques in the learning activities. In general, almost none of the modern methodological principles are recommended to be employed in the teaching and learning process.

The learners' previous learning experience is very similar to what they are doing at this school now. Their high school learning focused on developing knowledge of grammar and vocabulary. They enter this school with relatively poorly developed skills in reading, writing, speaking and listening. However, in contrast to the school learning situations, it is possible that aircraft students may have a stronger desire and higher need to learn and improve certain skills whether due to their own wants or preferences as learners or motivated by their study and job requirement i.e. target needs. It is considered likely by the researcher that they may benefit more at this stage from developing their own ways of learning, that is, by developing their own learning styles and strategies to learn skills. They may be more motivated to achieve success in language learning by the use of relevant and interesting learning activities. In other words, it is likely that they may be better motivated and benefit from seeing both their learning needs and wants and their

target needs or goals reflected in their learning.

However, the current learning situation does not consider such factors which may have a bearing on learning language.

In regard to the teaching staff, the training school has English teachers all with a first degree in English. Nevertheless, having been trained in the traditional approach to language teaching, the teachers including the researcher himself, tend to adopt a lock-step approach to teaching and to emphasize transmission of knowledge of grammar and vocabulary in their classrooms. Yet, it is possible that the teachers can fairly easily make adjustments to the methodology they use and teach English in a more interactive way from specialist texts if they are given the necessary awareness-raising training and follow up support. Thus I aim to find out what changes teachers feel able to make.

In this research, therefore, I have tried to analyze the different kinds of needs:

(a) the learners' study or job requirements, that is, target or goal oriented needs;

(b) the needs perceived by the user-institution, that is, what the institution regards as necessary or desirable for the learner;

(c) needs which are students' personal aims or wants, those things students desire to gain from the language course, and

(d) needs regarded as lacks, that is, the gap between what students already can do and what they cannot do.

To achieve these, I have contrasted the views of English teachers, technical and academic subject teachers, learners, employers, shop supervisors, and junior technicians.

I also tried to compare aspects of target needs, which are derivable from different kinds of factual information about the learners, their needs for language use in real-life communicative situations as well as the current language proficiency and langauge difficulties, with aspects of their learning needs, the cognitive and affective needs of the learners in the learning situation, which are derivable from information about factors such as motivation, confidence, attitudes, learners' wants and expectations, preferred learning styles and strategies.

The target objective needs analysis considered:

(a) what modes of communication-speaking, writing, reading are most commonly required;
(b) what channels-face to face, indirect;
(c) what types of text-manuals, lectures, handouts, conversation; are most frequently encountered.
(d) what content area-technical, general is generally used and;
(e) what aspects of language (functions, notions) and vocabulary are required.

While analyzing these objective needs, the researcher considered factors such as who the learners will use the language with, that is, whether they will use the English language mainly with teachers, supervisors, and fellow technicians, whether these people are all non-native speakers and what language competence they possess. The analysis also paid attention to the place where the language will be used, whether in classroom, workplace, and attention was paid to when and how much the language will be used.

In the target situation analysis, I have also tried to determine what approximate levels of skills and accuracy are necessary and in which micro-skills in order to achieve 'good enough' competence in English. Furthermore, I have tried to determine whether there are any special language requirements on the training course that may be different from the

requirements of the later job. For example, practice in answering exam type questions may be required in the English course because it is required for succeeding in other subject courses.

I have sought to analyze the learning situation by gathering information from employers, English teachers and students. An attempt has been made to obtain details about the levels of students' ability, what they already know, the time available, the competence of the English teachers, their knowledge and attitude to subject content language learning , etc. Details about learners' views on language teaching and learning background, kinds of methodology which would appeal to them or bore them have been investigated. In addition, details about students' motivation and interest, potential and limitations of the surrounding have been assessed.

The type of information obtained was then hoped to be related to a specific approach to teaching, learning and syllabus design. The investigation focused on the skills and sub-skills in particular content areas that need to be employed in the learning and job situations.

Thus, in considering reading,the investigator took into account the types of text which must be read and the modes of reading to be employed for them. A study of the specific linguistic forms was secondary rather than primary consideration, but attention was given to the major functions and notions exhibited in the manuals and other texts that students have to interpret, and oral discourse especially listening students are likely to be involved in.

It was hoped that the information obtained from the text analysis would constitute the functional/notional sub-syllabus of the syllabus though it is likely that a multi-langauge syllabus would be more appropriate, including sub-syllabuses of topics or themes, grammar or structure, vocabulary building, skills, etc.

I have obtained information from a range of sources through:

(a) Questionnaires simple enough to be understood by my subjects.

(b) Observation of aircraft technicians' behaviour and language performance in the workshop.

(c) Interviews-a series of structured questions: to supplement information gathered from questionnaires;to enable me to pursue any interesting new line of inquiry that developed,for example, regarding students' views of their needs and wants, attitudes, and; to provide me with a planned agenda to refer to.

(d) Collection of authentic data-samples of manuals and handouts from workshop and technical training school have been collected and analyzed.

As a result of this needs analysis I aimed to be able to draw up criteria for an ESP course for aircraft students at Debre Zeit Air force base and to make recommendations that will be relevant for the design of an ESP syllabus.

CHAPTER FOUR

4. Methodology and procedures

The overall objective of the study is to establish criteria for developing an ESP course for aircraft technicians of the Ethiopian Air Force by assessing the learning situations in the Air force training school and by identifying the target English skills and, strategies needed for their work. This has been achieved:

(a) By setting and analyzing questionnaires filled in by a sample of students, English teachers, academic and technical subject teachers, employers, shop supervisors, and junior aircraft technicians. Through teacher questionnaires I aimed to elicit information about teaching and learning.

(b) By analyzing sample work manuals and by analyzing sample technical subject teaching materials. This was to enable the researcher to identify the main functions, notions, text forms, importance of diagrams, charts etc.

(c) By analyzing the results of an observation of the actual work behaviour and language use of the technicians. It was hoped that they would provide the researcher with a collection of transcripts to analyze as authentic data regarding actual language use.

(d) By analyzing the results of a mini (structured) interview conducted with English teachers and selected students. The aim of this interview was to supplement information gathered from the questionnaires, by enabling me to pursue any interesting new line of enquiry that might develop, while providing a clear framework for discussion.

Regarding the methods employed for the study, the researcher has made use of ideas put forward by Mackay and Mountford(1978) on questionnaire design, Robinson(1991) on content analysis, Hutchinson and Waters (1987) on questionnaire design, Haile Michael Aberra (in a forth coming doctoral dissertation) on questionnaire design, and Mackay and Mountford (1978) on conducting structured interviews. As mentioned above, for this research, various sources were used in the hope it would enable the researcher to obtain more reliable information.

4.2 Sampling

In accordance with the nature of the research and the need for reliable information, various sources were used. Different groups of subjects had different population sizes which necessitated the use of more than one single sampling technique.

Therefore, the overall sample used was obtained by both purposive and simple random sampling. The purposive sampling was used because the size of the population in some cases was the same as sample to be selected. For example, the target population of English teachers, academic and technical subject teachers was not larger than its sample in size. In addition, purposive sampling was used where there were parts of target population which it was not possible to use in the sampling due to its existence at far distant places.

For example, in case of shop supervisors and junior technicians, purposive sampling was used. That is, shop supervisors and junior technicians were selected from Debre Zeit Air Force main base as those in Dire Dawa, Gode, and Addis Abeba could not be involved due to distance.

However, shop supervisors and technicians in Debre Zeit were selected by applying simple random sampling technique because the planned sample size was much smaller than the

population in Debre Zeit. Similarly, sponsors or employers were selected by simple random sampling technique.

4.3 Construction and administration of questionnaires

4.3.1 Students' questionnaire

A questionnaire was designed for aircraft students who had already finished the three semester English course and who were studying their specialist courses in English. The questionnaire was aimed to be administered to 35 students. However, only 27 students were available and completed the questionnaire.

The questions were aimed to elicit information about the learners' learning needs and target needs in general, about their learning motivation, interest, preferences for areas of English and skills, skills considered needed for studying other subjects, and areas of English and skills considered needed for their future jobs.

4.3.2 English Teachers' Questionnaire

A questionnaire was designed and distributed to English teachers. There were four English teachers. Two of them were still teaching while two had recently stopped teaching at the school. This sample did not include the English teacher who was carrying out this study.

All the teachers completed the questionnaire and returned it. The questions aimed at finding out and comparing responses regarding learning motivation, learning process in general with responses or judgements given by the learners. The English teachers' questionnaire included questions about their degree of satisfaction with the current syllabus and materials and their views concerning possible improvements.

It is recognized that the number of teacher respondents was so small that unfortunately the analysis of their responses can only be used to confirm or comment on the findings of the students' and junior technicians' questionnaires.

4.3.3 Academic and technical subject teachers' questionnaire

One questionnaire was distributed to 5 academic subject teachers and 8 technical subject teachers. The same questions were asked to these sample teachers because it was believed both groups were using English to teach their subjects in similar situations and employed the same language skills, and sub-skills, although the frequency of use of the skills might differ.

The questions concentrated on an evaluation of their aircraft students'English language proficiency, especially in the four language skills of reading, writing, listening and speaking, and on eliciting the macro skills' importance for the subjects they taught. The questions also elicited opinions on the various language activities according to their importance to the subjects the teachers taught.

4.3.4 Employers' or sponsors' questionnaires

As has been discussed in preceding chapters, the needs of learners are determined, among others, by the user institution, the teaching or training body, and by the learners themselves. Therefore, the researcher found it important to use the employers as one group of his subjects.

Six employers were selected for this purpose in a random selection. These employers were those who were working as training chiefs, school principals, syllabus and programme developers, and so on, in the training school.

I have called them employers or sponsors because they were people who had experience for many years in administrative work in the organization, and as trainers in the training school. Thus, they had better knowledge about the objectives of training aircraft technicians in English, and about educational principles than others working in unrelated fields. They represented the organization in all affairs of training.

All the six representative employers completed the questionnaire and returned it. The questionnaire focused on more general ideas than those for other subject groups. The general working situation of the technicians, the junior technicians' proficiency in English and the skills in English considered most important for the job of the technicians were included as major questions (see Appendix D).

4.3.5 **Shop Supervisors' questionnaire**

Shop supervisors are the most senior aircraft technicians, promoted later to the post of shop supervision due to their experience and knowledge. However, for this study the researcher also added the most senior aircraft technicians to the already designated shop supervisors from each work shop. The reason was that the shop supervisors were few in number. Believing that both actual shop supervisors and senior technicians could have the same knowledge regarding their field and could give reliable information, the researcher treated them all as shop supervisors.

So, the senior technicians were selected randomly from each workshop while all designated shop supervisors were included from each aircraft engine and airframe workshop. A single questionnaire was administered to a sample of 30 shop supervisors and all the 30 completed and returned the questionnaire.

The focus of the questionnaire was on the situations in

which aircraft technicians used English, English language skills and activities needed in the workshop, and degree of difficulties encountered by the most junior aircraft technicians or mechanics in using English.

4.3.6 Junior aircraft technicians' questionnaire

A questionnaire was prepared and distributed to a sample of 30 junior aircraft technicians. The sample was made by selecting junior technicians from different workshops. The technicians were those who had served for 1 to 6 years as aircraft mechanics and were selected from hydraulic shop, engine and airframe maintenance shop for Antonov-12 aircraft, Mig-23 fighter, Mig-21 fighter, L-39 trainer, SF Siaimarchetti trainer, Mi-24 and 35 helicopter, Aloutte-3 helicopter randomly from the list of the junior technicians.

All the 30 junior technicians filled out in the questionnaire and returned it. The questions concentrated on their working situation, the language skills they needed, the activities they carried out in English, the difficulties they might have encountered in using English.

They were also asked for their opinions regarding the idea of improving the English syllabus and materials. In particular, they were asked to what extent the English course had prepared them for their current English requirements.

4.4 The study of samples from work manuals and technical subjects

In order to analyze the target needs of the learners, studying the nature of their future job in relation to the use of the English language was necessary. In addition, students' need for learning other courses in English was taken into account. To achieve this, samples of reading materials were analyzed.

A sample of technical manuals which would need to be interpreted by the learners after they finished their English course was analyzed. The samples were taken from engine and airframe maintenance manuals for Antonov-12 transport (Russian made) aircraft, Mig-23 jet fighter, Mig-21 jet fighter, L-39 (Czech made) trainer aircraft, SF260 siaimarchetti (Italian made) trainer aircraft, Aloutte-III(French made) helicopter plane, and Mi-24(Russia made) Helicopter plane.

The manuals were studied considering four essential factors:

(a) The layout of the manuals. Here the point was to see what components the manuals were composed of, whether they were diagrammatic, or in text form or both. This was to identify what diagramatic interpretative skills would be required by technicians.

(b) Language functions. Here the interest was to see or identify the most common communicative functions which could be used by the learners.

(c) Language notions. The most frequent notions were sought. This was to identify notions stdents needed in their future job.

(d) Major topic areas. The aim here was to make comparison and contrast between topic areas dealt with in their work and in their training.

Analysis was carried out using the typology of functions and notions given by Van Ek (1975). Reference was also made to Wilkins (1976) to make use of an inventory of function and notions and their examples. Thus the sample from each manual was analyzed and the functions,notions,layout, and its major topic areas were described in tables. Examples of language functions, and notions were extracted from the manual and shown in the tables. In this analysis, I analyzed one fourth of the manual if the manual was composed of 100-200 pages, and one-fifth if it was composed of 210-400 pages, and one -tenth if it were more then 400 pages. For the layout, I counted all the diagrams and charts from cover to

To determine the nature of technical subject texts, I chose two teaching materials of " Theory of Engine" and "Theory of Airframe" . As was done for work manuals, these handouts were studied to identify key communicative functions, notions, and layout. The major topic areas were identified. The functions and nations identified were tabulated and extracted examples were shown in the same tables.

4.5 Observation of the work of technicians

For the purpose of collecting authentic data,the researcher observed technicians actually maintaining an aircraft for an observation period of 5 hours. Here the aim was to see what skill areas were most used by the technicians, particularly to see to what extent oral and reading skills in English were used, to supplement data obtained through the questionnaire and the manuals.

So, the researcher observed technicians in their work of maintaining an Antonov-12 and Mig-21 jet fighter. Before observing, I told the technicians not to feel that I was going to evaluate their work or their language use in any way which would result in any harm to them. I told them rather that I was observing the activity to identify activities that could be used to improve classroom teaching. Therefore, the technicians were relaxed enough to continue talking and doing their work quite naturally without giving any attention to my presence.

I prepared a sheet of paper with four lined columns with the headings reading, speaking, listening, and writing. Observation was noted at one minute intervals to indicate whether the technicians were reading, writing, speaking (and if so in what language and what communicative functions they used), listening or silently performing their duties.

4.6 Structured interview

Structured interview questions were prepared for English teachers and students with the aim of supplementing questions asked in their questionnaires and what could be seen through observation.

A total of two English teachers and ten aircraft students were interviewed. Student interviewees were selected both from the students who had just started the course and those who had already finished. The aim was to see whether learners come with some kind of expectations regarding their future needs and the nature of training they needed and also with any preferences for the language skills they wanted to improve from the very beginning of the course. In addition, the aim was to compare such things between the already experienced and new students in the training.

From the four English teachers, I could find only two who were able to come for interview. The interview was recorded on tape. The interview for students was conducted in Amharic although it was prepared in English originally. The reason for this was that the students told the researcher that they would be able to answer the questions more clearly and confidently if it was in Amharic. However, one student was interviewed in English on his own request.

CHAPTER FIVE

5. Findings

The findings of this study will be discussed under 14 major headings. This has been for simplicity as it is believed that they can be seen more easily and clearly if they are summarized briefly and the responses to common questions are grouped and compared. The following aspects will be discussed:

5.1 The choice of students' field as shown by employers and the students (factors concerning learning motivation).

5.2 Preferences in regard to areas of English and skills.

5.3 Students' perceptions of their future working situation and their perceptions of areas of English needed for the job.

5.4 The learning process and attitudes of students to the course as seen by English teachers and students.

5.5 The English teachers' degree of satisfaction with the current syllabus and materials. A description of learning activities as made by English teachers.

5.6 Students' English language proficiency as judged by English teachers, subject teachers and technical subject teachers.

5.7 Students' need for using English language skills and activities in learning other courses as perceived by the students, subject teachers and technical subject teachers.

5.8 The need for improvement of the current syllabus and materials as suggested by employers, English teachers and junior technicians.

5.9 Technicians' job situation and their need for English language skills as perceived by employers, shop supervisors, and junior technicians.

5.10 Junior technicians' English language proficiency as evaluated by employers, shop supervisors, and junior technicians themselves.

5.11 Activities in workshops and difficulties encountered by junior technicians as judged by shop supervisors and the junior technicians themselves.

5.12 The nature of work manuals and technical handouts.

5.13 Findings from the observation of junior technicians at work.

5.14 Analysis of answers to interview questions.

5.1 The choice of students' field as shown by employers and the students

The aircraft students in the Air force training school were asked in their questionnaire (see Appendix A) to give some background information about themselves. They indicated that they had been studying at the school for one and a half years. All of them had completed their secondary education and were in age range between 20 and 24.

When they were asked whether this field was their first choice, 81.5% said it was their first choice while 18.5% said it was not. When their employers were asked whether the students typically chose the field or the organization chose it for the students, 66.7% of employers indicated that the Air Force chose the field and assigned them while only 33.3% said students chose the field for themselves.

Customarily, students join the Air Force on their choice after passing an entrance exam, but after they are admitted there is student allocation to different fields of study. It is possible that the Air Force considers the students' first choice until it gets the required number of trainees. Thus, for any particular programme perhaps some students are assigned to other fields if the number is already over. Therefore, the interests of the students are not fully considered.

5.2. Preferences in regard to areas of English and skills, and areas of English perceived to be needed for training studies And for the job as judged by students

Some questions were formulated to elicit responses about (a) the learners' preferences for areas of English and skills and (b) their perception of the needs for skills and areas of English for their training studies and the job. These questions were designed to reveal information on the learning situation and indicate the extent to which learners' interests and motivation were considered.

First, students were asked to rate the frequency of use of various teaching aids, a question which was also asked to their English teachers. The results are summarized below in Table 1.

Table 1 Assessment of the use of teaching aids by students(s) and English teachers (ET) in percentages

Table 1. Assessment of the use of teaching aids by students and English teachers (ET) in percentages:	V.regularly used		Regularly used		Sometimes used		Rarely used		Never used	
	S	ET	S	ET	S	ET	S	ET	S	ET
Teach. & Stud. book	77.8	25	18.5	75	3.7	0	0	0	0	0
Sample mainten -ance manuals	0	0	0	0	14.8	25	29.6	50	55.6	25
Tape recorders	0	0	0	0	0	0	0	25	100	75
Models of aircraft	0	0	18.8	0	14.8	0	37.1	25	29.6	75
Videos	0	0	0	0	0	0	3.7	0	96.3	100
Realia	0	0	7.4	0	11.1	0	29.6	25	51.9	75
A lang. lab.	0	0	0	0	3.7	0	3.7	0	92.5	100
An overhead projector	0	0	0	0	3.7	0	0	0	96.3	100

As Table 1. shows, in almost all responses, students and English teachers assessed the use of the various teaching aids similarly. It is clear that the teaching and learning is highly dependent on the textbooks. It is also clear that samples from maintenance manuals are rarely used for learning English. 55.6% of students and 25%of teachers said such a text was not used at all.

The majority of students and teachers confirmed that no tape recorders, videos, realia, language laboratory lessons or overhead projectors were ever used as teaching aids. The students' judgement about the use of model aircraft differed from that of the teachers possibly because the presence of different kinds of model aircraft in their classrooms was taken to by them to be examples of use. In general, both students and teachers agree that there is no use of any aids to language teaching and learning which would make the learning process more varied and interesting.

Regarding the physical environment, students were asked in item 9 to describe aspects of the physical learning environment. As Table 2 shows, the majority of students described the physical learning environment as broadly suitable for learning. This judgement seems realistic as far as the researcher's experience is concerned. However, classes are sometimes disturbed by the noise made by the aircraft.

Table 2 Assessment of physical learning environment by students (S) in percentages:

Table 2	(a) S	(b) S
(a) Noisy (b) Quiet	33.3	66.7
(a) Too many students in class (b) Appropriate number of students	22.2	77.8
(a) Dark classrooms (b) Light classrooms	0	100
(a) Dull classrooms (b) Interesting	18.5	81.5
(a) Uncomfortable furniture (b) Comfortable furniture	33.3	66.7

Students were asked in item 12 to show their preferences regarding modes of class organization that in their opinion would help them to learn best. The majority of them (63%) showed preference for a mode of class organization in which the teacher has some control but students are also involved in carrying out tasks in pairs and groups, which goes

in line with their teachers' judgement in which 100% chose this mode of organization .

This is particularly interesting as it is not typical of students' experience at high school level, and not traditionally highly valued as a mode of class organization at any other level either. Rote learning by large groups is traditional, so students tend to be passive rather than generally interactive and exploratory. In real life in the Air Force School, as responses to item 7 of the same questionnaire (see Table 6) indicate, the whole class and individual work are virtually the only learning modes.

In item 10, students were asked to show their degree of satisfaction with various learning activities and school facilities in order to indirectly assess ways of enhancing motivation for learning English. As Table 3 summarizes, the majority of students said that they were very satisfied or satisfied with the teacher's classroom management, encouragement and relationship with the class, library facilities and relation of language skills to the job. However, the students showed their dissatisfaction with the remaining sources of learning motivation. Moreover, students seem to exaggerate the relevance of current language skills training to the job. When I consider the existing classroom learning situation, only reading is emphasized which is relevant to their future job and even reading is poorly taught.

Table 3. Assessment of students' satisfaction with learning activities and facilities or sources of learning motivation as judged by students (S) in percentages:

Table 3	V.satis S	Satisfied S	Neutral S	Dissat. S	V.Dsat. S
Teacher's classroom management	48.8	40.7	11.1	0	0
Teacher's encouragement	33.3	66.7	0	0	0
Teacher's relationship with class	51.8	37.1	11.1	0	0
Learning activities	18.5	44.4	29.6	7.4	0
Library facilities	48.1	26	11.1	14.8	0
Relation of topics to the job	14.8	14.8	29.6	22.2	18.5
Relation of lang. skills to the job	29.6	55.6	11.1	3.7	0
Relevance of passages and exercises in English textbooks to the job	3.7	18.5	59.2	14.8	3.7

As can be observed from Table 3 above, in general, students are more tolerant and respectful of teacher behaviour and performance than they are of the value of the teaching materials or the suitability and variety of learning activities.

In item 11, aircraft students were asked to show their preferences regarding the English language skills and aspects of knowledge in learning English they would more like to improve. This question was designed with the belief that an emphasis on skills and areas of knowledge which students desired more to improve would motivate them while neglecting them would be likely to demotivate them. This would, therefore, help future course designers to consider learners' preferences or wants more objectively. The findings are summarized in Table 4 below.

Table 4 Assessment of English language skills and areas of knowledge students particularly want to improve

Table 4	The most desired S	The 2nd most desired S	The 3rd desired S	The 4th desired S	The 5th desired S	The 6th desired S
Listening	22.2	7.4	18.5	18.5	11.1	22.2
Speaking	63	14.8	11.1	3.7	3.7	3.7
Reading	11.1	11.1	22.2	18.5	29.6	7.4
Writing	0	18.5	14.8	26	18.5	22.2
Vocabulary	0	11.1	18.5	29.6	11.1	29.6
Grammar	14.8	44.4	11.1	7.4	14.8	7.4

As can be observed from the table, students most want to improve their speaking skills. Their second strongest desire is to improve their knowledge of grammar. They also want to improve listening, reading, and writing skills, in that order of priority. This order is possibly given because speaking is currently given the least importance.

They indicate a strong desire to improve grammar (the 2nd most highly desired skill or knowledge area) although it is even now the most emphasized area. This all may lead one to conclude that:

(a) Perhaps students do not understand what 'skills' means.

(b) Students are less strongly aware of the importance of developing listening skills by comparison with the value attached to this skill by junior technicians and shop supervisors.

(c) Students feel they lack confidence in speaking in English and perceive this to be something they want to improve in.

(d) Even though reading skills are obviously a very special need for them, it is given a low priority, possibly because students have not experienced reading skill development as a priority area in their past experience of learning, or possibly because its future work value to them is as yet unclear, possibly because they "performed" to their own satisfaction on the very limited kind of reading tasks they were given in the past.

(e) Grammar is traditionally given priority in the class room and, therefore, has considerable status.

Students were also asked to show their preference for topic areas of English from which their studies should be chosen. In this regard, half the students showed their preference for a balance between topics from general and technical English by ranking it the first choice. They ranked general English as their second preference and a course based totally on technical English as the third preference.

Table 5 Assessment of areas of English preferred by student(s) in percentages:

Table 5	The most preferred	The 2nd preferred	The 3rd preferred
	S	S	S
General English	33.3	37.1	29.6
Technical English	18.5	40.7	40.7
A balance b/n general and technical English	51.8	29.6	18.5

Therefore, students' preferences match with the views of English teachers and junior aircraft technicians, the majority of whom ranked the topic areas of English exactly in the same way (See Table 5b) as the basis for the improved course. The new English course should take this factor into account.

5.3. Students' perceptions of their future working situation

Students were asked to show their perceptions regarding in what working situations they expected that they would use English most after completing their training. Students anticipate that they will use English in the workshop most. They also believe that they need to use English in the

Table 10 Assessment of English teachers' satisfaction with the current emphasis on language skills and areas of knowledge in course materials as shown by English teachers (ET), in percentages:

Table 10	V.satisfied	Satisfied	Neutral	Dis-satisfied	V.dis-satisfied
	ET	ET	ET	ET	ET
Listenings Skills	0	0	0	100	0
Speaking skills	0	0	0	50	50
Reading skills	0	50	25	25	0
Writing skills	0	25	50	25	0
Grammar	0	100	0	0	0
Vocabulary	0	50	50	0	0

This judgement of teachers seems realistic. Teachers do tend to emphasize grammar, vocabulary and reading in their classroom teaching as shown in Table 9.

English teachers were also asked to describe learning activities used with students in terms of frequency. The belief was the more varied activities used, the more interested and motivated the learners would be towards learning.

As Table 11 summarizes, the activities frequently used regularly are very limited: asking and answering questions orally, reading aloud, learning vocabulary meanings, and learning grammar rules. Repetition, reading silently for meaning, and listening to and understanding teacher questions and instructions are less frequent activities whereas controlled or structured speaking, controlled writing of grammar and vocabulary exercises, writing dictations and making notes from books are seldom used.

In general, teachers do not get their students to:

(a) Solve problems through oral group discussion.

(b) Do any kind of oral practice other than repetition and answering or teacher questions on grammar or a reading text.

(c) Listen to lectures and make notes.

(d) Do any kind of meaningful or creative writing.It is interesting that teachers did not assess any learning activities other than asking and answering questions orally to be very frequent. This suggests a passive learning situation is tolerated by both students and teachers.

On the whole, the teachers' judgement seems to reflect the reality, may be except on a few points. For example, they report that repeating language items is a frequent activity. This is perhaps true of some teachers who may use this activity for some pronunciation practising purposes. Also reading silently for meaning is not common in the school in my experience. The course design should consider introducing a variety of more meaningful learning activities which are given less attention than the ones indicated here.

Table 11 Assessment of language learning activities carried out by students as judged by English teachers(ET) in percentages:

Table 11	V.frequent		Frequent		Some-times		Rarely		Never	
	ET		ET		ET		ET		ET	
Asking and answering questions orally	25		50		25		0		0	
Solving problems through group discussion	0		0		25		75		0	
Repetition	0		50		50		0		0	
Controlled/Structured speaking	0		0		75		25		0	
Giving oral reports	0		0		25		75		0	
Listening to lectures and making notes	0		0		0		75		25	
Reading aloud	0		100		0		0		0	
Reading silently for meaning	0		50		25		25		0	
Controlled writing of grammar and vocabulary exercises	0		25		75		0		0	
Writing dictations,making notes from books	0		25		50		25		0	
Writing reports and essays	0		0		50		25		25	
Listening to and understanding questions,instructions	0		50		25		0		25	
Learning vocabulary meanings	0		100		0		0		0	
Learning grammar rules	0		100		0		0		0	

5.6 Aircraft students' English language proficiency as judged by English teachers, academic subject teachers, and technical subject teachers

The academic subjects taught to aircraft students are physics, mathematics, and chemistry, and all the 5 teachers are graduates with B.Sc. from the Addis Ababa university in their respective field of studies. They have a teaching experience ranging from 2 to 11 years. All are Ethiopians (See Appendix C).

The technical subjects taught to aircraft students are Theory of engine, Theory of airframe, Aerodynamics, Strength of materials, and Technical Drawing. All the 8 teachers are Ethiopians and hold Diplomas in their respective specialist fields from the Ethiopian Air Force Technical School, Addis Ababa Technical School, the USA or the USSR. All of them have an experience of teaching from 6 to 15 years.

These teachers were asked to evaluate their aircraft students' English language proficiency.

As the findings summarized in Table 12 below indicate reading is regarded by all 3 groups of teachers as less of a problem than other skills and areas of knowledge. This is possibly, however, an indication that trainees are not expected to read critically and discriminate understanding of concepts.

Subject teachers and technical subject teacher regard their students in writing skills as broadly average to weak. English teachers regard the students weak in writing.

All teachers agree that their students are poor in speaking skills with English teachers being most critical. Students are considered generally to be weaker in speaking than in reading or writing.

Regarding listening, the academic and technical subject teachers evaluated the students' proficiency between good and average while English teachers' evaluations were scattered. They appeared not to know how to assess proficiency in this skill. This difference in evaluation indicates the unreliability of respondents' perceptions of the listening skills and abilities demonstrated in their subjects. Yet it

is clear that listening skill must play a key role both in helping students to cope with academic lectures (transactional listening) and in preparing students for the more interactional listening skills they might find useful in the workshop.

English teachers believe their students' proficiency in grammar is better than the subject and technical subject teachers do, possibly because they are thinking more of grammar knowledge while subject and technical subject teachers look at linguistic competence i.e accuracy in writing and speaking. So the subject and technical subject teachers regard the students average to weak in grammar.

English teachers regard their students to have vocabulary knowledge between good and average while technical and subject teachers rate students between weak and very weak. This is possibly because English teachers are considering knowledge of general English word meanings taught and tested in class while the subject and technical subject teachers are considering the students' ability to interpret new word meanings during their studies and to make sense of texts where a number of unknown vocabulary items occur.

Table 12 an evaluation of aircraft students' English language proficiency as made by English teachers (ET), academic subject teachers(ST) and technical subject teachers (TST) in percentages:

Table 12		V.good	Good	Average	Weak	V.weak
Reading	ET	0	25	75	0	0
	ST	0	20	40	40	0
	TST	12.5	50	37.5	0	0
Writing	ET	0	25	0	75	0
	ST	0	0	60	40	0
	TST	0	37.5	25	37.5	0
Speaking	ET	0	0	25	0	75
	ST	0	0	20	60	20
	TST	0	0	37.5	62.5	0
Listening	ET	0	25	25	25	25
	ST	0	40	60	0	0
	TST	0	50	25	25	0
Grammar	ET	0	50	50	0	0
	ST	0	0	80	20	0
	TST	0	12.5	37.5	25	25
Vocabulary	ET	0	50	25	25	0
	ST	0	0	0	80	20
	TST	0	0	62.5	12.5	25

So it would appear that to support their academic and technical studies students need to learn listening, speaking and writing skills with more emphasis than has been placed so far. The students should also learn the kind of vocabulary development skills and strategies helpful to them for learning their academic and technical or specialist subjects.

5.7 Students' need for using English language skills and activities in learning other courses as perceived by the students, subject teachers and technical subject teachers

Students, subject teachers and technical subject teachers were asked to rank the four major language skills in order of their importance for learning other subjects at the aircraft school.

The following results were obtained. Overall listening skills were judged by all respondents to be used very frequently to frequently as a greater percentage of all the respondents indicated so. Reading and writing were judged to be used equally frequently although less frequently than listening.

Students regard listening, reading and writing as the most important with listening first and reading and writing equal 2nd and speaking 4th.

Technical subject teachers agree with students that listening is the key skill, together with writing but subject teachers place lower priority on listening. Possibly this is because academic subject teachers explain their lessons less frequently orally than the technical teachers do. Academic subjects contain more calculations done by students after formulas are given once, unlike maybe subjects such as "Theory of Engine" which need more oral explanation from teachers.

Speaking is regarded by students as being relatively unimportant in studying other subjects though subject teachers and technical subject teachers placed rather more emphasis on it. Perhaps this is because students take the general nature of studying academic and technical subjects to be based primarily on reading and writing, and listening

Whereas teachers may be emphasising the overall weakness students show in giving oral explanations asking and answering questions etc.

Table 13 Assessment of students' need for using English language skills in studying other courses as indicated by students (S), subject teachers (ST) and technical subject teachers (TST) in percentages.

Table 13		V.frequent	Frequent	Sometimes	Rarely	Never
Listening skills	S	55.6	33.3	7.4	3.7	0
	ST	20	60	20	0	0
	TST	75	25	0	0	0
Speaking skills	S	3.7	33.3	37.1	26	0
	ST	20	40	0	40	0
	TST	0	62.5	12.5	25	0
Reading skills	S	48.1	33.3	11.1	7.4	0
	ST	0	20	60	20	0
	TST	62.5	12.5	25	0	0
Writing skills	S	48.1	33.3	11.1	7.4	0
	ST	20	40	20	20	0
	TST	12.5	62.5	25	0	0

Reading and writing are regarded to be equally important by students but technical and academic subject teachers tend to disagree. Subject teachers regard reading as less important than speaking or writing while technical teachers regard reading as more important than writing and as important as listening. This suggests that academic subject teachers, in general, depend more on oral explanation and students' writing notes and on their students' listening abilities than the technical teachers, who depend more on students' reading from handouts or notes.

On the whole, listening skills, writing skills and reading skills are important for studying other courses. Speaking skills also need consideration in any new English programme.

Students, subject teachers and technical subject teachers were asked to rank English language activities according to their importance for the courses they taught or learned in English.

The activities were divided into four major categories:

reading activities, writing activities, listening activities and speaking activities each with several respective micro activities. For simplicity the findings were summarized in four tables, Table 14 a,b,c and d.

Therefore, as Table 14a shows, while three of the reading activities given were considered useful for learning other courses than English, reading textbooks was considered the most frequently used activity, followed by reading handouts and notes from exercise books and reading test items. From this finding it can observed that students need to use textbooks for learning on some courses while handouts and copied notes are more important on others. In their responses technical subject teachers suggest they use handouts more frequently than subject teachers for supporting their teaching activities. Therefore, the new English course should take into account the importance of reading skills for learning other course.

Table 14a Assessment of frequency of students use of different reading activities in studying other courses as indicated by students(S),Subject teachers (ST) and technical subject teachers (TST) in percentages:

Table 14a		V.frequent	Frequent	Sometimes	Rarely	Never
Reading text books	S	63	22.2	14.8	0	0
	ST	20	40	20	20	0
	TST	12.5	50	12.5	25	0
Reading handouts/ notes copied into exercise books	S	18.5	48.1	22.2	3.7	7.4
	ST	20	0	60	20	0
	TST	50	50	0	0	0
Reading test items	S	14.8	33.3	33.3	18.5	0
	ST	0	40	20	40	0
	TST	25	25	50	0	0

Students, subject teachers, and technical subject teachers evaluated the frequency of use of writing activities. Thus, according to the summary given in Table 14B, copying of lecture notes was shown to be the most frequently used form of writing for learning the academic and technical subjects. Writing test items was evaluated to be

the next most frequently used writing activity to copying lecture notes. Writing other assignments i.e assignments that did not involve taking notes from books, writing tests, copying notes from the blackboard were judged to be the third most frequent writing activity, while students' making their own notes from books and writing essays and reports were considered to be the least frequent.

Table 14b Assessment of frequency of students' use of different writing activities in studying other subjects as made by students(S), subject teachers (ST) and technical subject teachers(TST) in percentages:

Table 14b		V.frequent	Frequent	Sometimes	Rarely	Never
Copying lecture notes	S	44.4	26	22.2	7.4	0
	ST	60	40	0	0	0
	TST	12.5	37.5	25	0	25
Making notes from books	S	11.1	48.1	29.6	11.1	0
	ST	0	20	20	60	0
	TST	12.5	25	12.5	25	25
Writing reports, essays	S	7.4	18.5	14.8	44.4	14.8
	ST	0	0	0	0	100
	TST	12.5	0	0	37.5	50
Writing other assignments	S	26	40.7	29.6	3.7	0
	ST	0	20	20	60	0
	TST	12.5	0	62.5	25	0
Writing tests items	S	11.1	37.1	29.6	14.8	7.4
	TS	0	20	80	0	0
	TST	0	12.5	62.5	25	0

In summary, subject teachers tend to write an entire set of notes on the blackboard from which students copy. Technical subject teachers seem to do this less, discussing the lesson more in class with students as is borne out by TAble 14C. They seem to depend more on the handouts they prepare too. It is clear that students are not involved frequently in writing activities except copying their lecture notes.

Students, subject teachers, and technical teachers were asked to rank the various listening activities according to frequency of use for learning subject courses. The findings are summarized in Table 14c below.

Listening to teachers explanations, was agreed by most respondents to be the most frequently used activity. It would appear that technical subject teachers spend more time than subject teachers on explanation to class. This explanation is then followed up with handouts. Other frequent activities were judged to be listening to teachers instructions and questions.

As the finding indicates, most if not all listening is transactional i.e it is concerned with interpreting teacher talk rather than listening and interacting because both subject and technical subject teachers reported that there was little class or group discussion in their academic and technical courses, although students reported that they listen to each other frequently in pair/group discussion and in class discussion. This, however, conflicts with aircraft students' assessment of how frequently they are involved in speaking in pair/group discussions (See Table 14d) and it is thus unreliable.

Table 14c Assessment of frequency of students use of various listening activities for studying other courses as made by students (S), subject teachers (ST) and technical subject teachers (TST) in percentages:

Table 14c		V.frequent	Frequent	Sometimes	Rarely	Never
Listening to teacher explanations	S	66.6	33.3	0	0	0
	ST	40	40	20	0	0
	TST	87.5	12.5	0	0	0
Listening to other students in class discussions	S	26	48.1	22.2	3.7	0
	ST	0	0	40	60	0
	TST	0	25	12.5	50	12.5
Listening to other students pair/group discussions	S	48.1	48.1	3.7	0	0
	ST	0	0	20	60	20
	TST	0	25	37.5	12.5	25
Listening to teacher questions	S	33.3	40.7	18.5	7.4	0
	ST	0	80	20	0	0
	TST	62.5	0	37.5	0	0
Listening to teacher instructions	S	59.3	22.2	11.1	7.4	0
	ST	40	20	40	0	0
	TST	62.5	37.5	0	0	0

The learning activity seems to be teacher dominated. However, any new English teaching course should consider students' need for transactional listening skills and should also aim to develop interactive listening skills as a means of helping students to obtain clarification from instructors negotiate meaning etc.

The same respondents were asked to rank different speaking activities according to their frequency of use for learning academic and technical specialist courses in the Training school. As Table 14d indicates, the respondents do not seem able to give clear information about frequency of use of speaking activities in these courses.

However, as the majority of them indicated, asking and answering questions is the most frequent speaking activity. Whole class and group discussions are not common.

When the major categories of activities are compared overall reading and listening activities seem to be the most frequently used while writing and speaking activities are less frequently required in learning academic and technical subjects. Nevertheless, it is clear that any new syllabus and materials for teaching English could usefully also emphasize study skills such as making notes from books, interactive skills for participating effectively in discussion etc.in order to help students become more effective language users.

Table 14d Assessment of frequency of students' use of different speaking activities for studying other courses as made by students (S), subject teachers(ST) and technical subject teachers (TST) in percentages:

Table 14d		V.frequent	Frequent	Sometimes	Rarely	Never
Asking and answering questions	S	48.1	26	22.2	3.7	0
	ST	40	0	40	20	0
	TST	25	37.5	37.5	0	0
Giving oral reports	S	7.4	11.1	40.7	37	3.7
	ST	0	0	60	20	20
	TST	12.5	25	12.5	25	25
Participating in whole class discussions	S	14.8	44.4	33.3	7.4	0
	ST	0	20	40	40	0
	TST	25	12.5	62.5	0	0
Participating in pair/group discussions	S	11.1	14.8	40.7	26	7.4
	ST	0	20	40	0	40
	TST	12.5	12.5	37.5	37.5	0

5.8 The need for improvement of the current syllabus and materials as suggested by employers, English teachers and junior technicians

Employers, English teachers and junior technicians were asked to say to what extent they would want to see improvements to the current syllabus and materials. Other questions were intended to elicit information about what they felt an improved syllabus and materials should focus on.

As Table 15a indicates below, all the respondents strongly agreed with the idea of improving the current syllabus and materials. Regarding what the focus of any improved syllabus and materials should be, employers and English teachers assessed improved skills in speaking reading listing and writing to be more important than focusing on grammar or vocabulary while junior technicians (90%) felt more strongly that the new syllabus should develop knowledge of grammar and vocabulary.

Overall the respondents agreed that the new syllabus and materials should improve all the four language skills while junior technicians wanted focus also on grammar. English teachers and employers discriminated more clearly in favour of skills rather than knowledge, skills including vocabulary learning skills.

Such close agreement among the respondents with the skills' and knowledge areas' improvement implies that the current syllabus and materials have not ever considered the needs of the learners for the skills and knowledge for their studies and job. Therefore, it is clear that the new English course should place much more emphasis on language skills than before and more than on grammar and vocabulary, except strategies for learning vocabulary.

Table 15a Assessment of English teachers' (ET), employers' (E), and junior technicians' (JT) opinions regarding the improvement of the current syllabus and materials in percentages:

Table 15a		Strongly agree	Agree	Neutral	Disagree	Strongly disagree
The current syllabus and materials need to be improved	ET	75	25	0	0	0
	E	100	0	0	0	0
	JT	43.3	46.7	3.3	6.7	0
The improved syllabus and materials should focus on 1. Developing knowledge of grammar	ET	0	25	75	0	0
	E	33.3	0	50	0	16.7
	JT	43.3	46.7	3.3	3.3	0
2. Developing vocabulary	ET	25	75	0	0	0
	E	0	66.7	16.7	0	16
	JT	43.3	36.7	13.3	3.3	3.3
3. Improving reading skills	ET	50	50	0	0	0
	E	66.7	16.7	16.7	0	0
	JT	33.3	40	16.7	10	0
4. Improving listening skills	ET	25	75	0	0	0
	E	50	50	0	0	0
	JT	33.3	43.3	10	6.7	0
5. Improving writing skills	ET	25	75	0	0	0
	E	66.7	33.3	0	0	0
	JT	40	43.3	3.3	6.7	6.7
6. Improving speaking skills	ET	50	50	0	0	0
	E	83.3	16.7	0	0	0
	JT	50	36.7	6.7	3.3	3.3

English teachers, employers, and junior technicians were asked to comment on what content or topic areas should form the basis of any new courses. Most (average 58.3%) of the respondents ranked a balance between texts and topics from general English and technical English as the most relevant basis for any improved course. The respondents ranked texts or topics from technical English the 2nd best basis, and texts or topics from general English the least relevant.

Table 15b. Ranking of texts or topic areas for the improved English course according to their importance by English teachers (ET), employers (E), and junior technicians (JT) in percentages:

Table 15b		Most Important	2rd most important	3rd important
Texts or topics from Technical English	ET	25	50	.25
	E	83.3	0	16.7
	JT	10	50	40
Texts or topics from General English and Technical English	ET	0	25	75
	E	0	50	50
	JT	6.7	40	53.3
A balance between texts and topics from General English and Technical English	ET	75	25	0
	E	16.7	50	33.3
	JT	83.3	13.3	3.3

As the findings show employers argued strongly for the importance of using job-related texts or topics from technical English alone as the basis for enabling the students to handle their future jobs successfully in English while English teachers and junior technicians accept the value of a balance or both technical and General English for the same goal.

The junior technicians' preference for a balance of texts appears to be an indication of the need to take into account the possible motivation and interest that can be generated for learning the language on the part of the learners, if used. Teachers may also be worried about their competence and thus retaining face if they are involved in teaching topics only through highly technical texts. So, the new English course should probably base itself on the balance of the texts indicated.

Teacher reorientation is an essential aspect of designing an effective ESP course. So, in this research English teachers were asked to evaluate themselves in terms of their ability to teach English through specialized texts, texts such as about airframe maintenance.

All of the teachers said that they would be able to teach English through such specialized texts if the texts or the materials were well prepared i.e. if enough support in the form of background information, answers to tasks, recommended procedures, were given. Teachers would also benefit from an awareness raising reorientation course in which attitudes to language and language learning, learner strategies and learning styles etc. could be discussed.

One factor all the teachers complained about was the insufficient time allocated for English. This needs to be taken into account, and efforts should be made to expand the number of teaching hours available for any new course.

5.9 Technicians' job situation and their need for English language skills as perceived by employers, shop supervisors and junior technicians

Employers, shop supervisors, and junior technicians were asked to describe in what situations aircraft technicians actually used English for their jobs, (See Appendices D,E and F). They were asked to rate three physical settings in terms of frequency of use of English. The following results were obtained. See Table 16 below.
As the table indicates, English is used in the workshop more regularly than in flight. This is possibly stated because a greater number of people are engaged in maintaining the aircraft on the ground. In fact, as I found out from my observation, spoken English is very seldom used in the workshop, so the details given here are in that respect inaccurate. At present the majority of speaking in the maintenance area is in Amharic. This is attributed to the poor academic background and lack of confidence of students in English. However according to the Training School Commander, English should be used for the entire communicative process, on the grounds of the need to maintain high professional standards in aircraft maintenance. It is however open to question as to whether this is likely to be culturally acceptable or feasible.

Table 16 Description of frequency of use of English in various physical settings by aircraft technicians, as indicated by employers (E) shop supervisors (SS), and junior technicians (JT) in percentages.

Table 16		V.regular	Regular	Sometimes	Rarely	Never
In the workshop	E	16.7	83.3	0	0	0
	SS	26.7	60	10	0	3.3
	JT	26.7	50	20	3.3	0
In the office	E	0	16.7	50	33.3	0
	SS	6.7	20	56.8	13.3	6.7
	JT	3.3	30	36.7	23.3	6.7
In flight	E	16.7	66.7	16.7	0	0
	SS	56.8	23.2	10	10	0
	JT	30	36.7	20	13.3	0

Employers, shop supervisors and junior technicians were asked to rank the different language skills according to their importance for junior technicians' work. As can be observed from Table 17, reading skills is clearly the area that aircraft technicians need most as indicated by all groups of respondents. Junior technicians regard listening as more important for their work than writing. They also regard listening and speaking as more important than employers and shop supervisors do. Since it is likely that shop supervisors and junior technicians have a clearer idea of their needs than employers, improved listening and speaking skills would seem to be skill areas that could be beneficial to junior technicians in their work.

Table 17 Assessment of language skills important for the technicians' work as ranked by employers (E), shop supervisors (SS), and junior technicians (JT) in percentages:

Table 17		The Most important	2nd Most important	3rd important	4th important
Listening skills	E	16.7	0	33.3	50
	SS	10	13.3	46.7	30
	JT	16.7	43.3	33.3	6.7
Speaking skills	E	0	0	66.7	33.3
	SS	6.7	40	30	23.3
	JT	20	16.7	23.3	40
Reading skills	E	100	0	0	0
	SS	76.7	13.3	3.3	6.7
	JT	60	16.7	20	3.3
Writing skills	E	0	100	0	0
	SS	10	30	20	40
	JT	3.3	23.3	26.7	46.7

In general, therefore, reading skills were the considered most important area and listening and speaking the 2nd most and the 3rd important skills for the job.

Any new course design should clearly, take into account the relative importance of the skills indicated above. Nevertheless, this does not imply that the English course should strictly follow the order in this rank. For example, speaking was ranked the 3rd most important here but students had indicated elsewhere that it was the skill they wanted the most to improve and certainly since there is little evidence of speaking skills currently being used in the maintenance area, it shows that speaking skills should be given due emphasis.

5.10 Junior technicians' English language proficiency as evaluated by employers, shop supervisors, and junior technicians themselves

As Table 18 indicates, junior technicians' proficiency in listening was highly and probably overrated by all respondents, ranging from average to very good. Speaking abilities, being observable, were less positively but

probably more realistically rated, with most ratings being in the average to weak proficiency ranges.

Junior technicians' reading proficiency, not observable, was highly and probably overrated by all, with most ratings being in the good or very good categories. Junior technicians also regard their reading proficiency as adequate for their work.

Junior technicians rated their proficiency in writing to be good while employers and shop supervisors denied this. Junior technicians in fact regard themselves more proficient in all skills than their employers and shop supervisors do.

As can be observed from the finding, junior technicians are regarded to have better proficiency in reading and listening than in other skills the order being reading, listening, writing, and speaking. That is, more receptive, less observable, skills are perceived to be better developed than productive skills. This is probably unrealistic and somewhat unreliable as a finding.

Table 18 An evaluation of junior aircraft technicians' English language proficiency by employers (E), shop supervisors (SS) and junior technicians (JT) in percentages:

Table 18		V.good	Good	Average	Weak	V.weak
Listening skills	E	0	50	33.3	16.7	0
	SS	23.3	30	36.6	10	0
	JT	33.3	40	23.3	3.3	0
Speaking skills	E	0	0	50	33.3	16.7
	SS	0	10	40	43.3	6.7
	JT	6.7	20	43.3	26.7	3.3
Reading skills	E	0	83.3	16.7	0	0
	SS	16.7	60	16.7	3.3	3.3
	JT	43.3	43.3	13.3	0	0
Writing skills	E	0	16.7	50	33.3	0
	SS	26.7	23.3	30	13.3	6.7
	JT	33.3	33.3	26.7	6.7	0

5.11 Activities in workshops in English and difficulties encountered by junior technicians as assessed by shop supervisors and junior technicians

Shop supervisors and junior technicians were asked to

rank the reading activities engaged in most in English their workshops. From the suggested activities reading work manuals was ranked as the most frequent activity, followed by reading technical remarks from logs and reading charts and diagrams.

Table 19 Frequency of reading activities in English in workshops as ranked by shop supervisors (SS) and junior technicians (JT) in percentages:

Table 19	Most frequ.		2nd frequ.		3rd frequ.		4th frequ		5th frequ.		6th frequ.	
	SS	JT	SS	JT	SS	JT	SS	JT	SS	JT	SS	JT
Reading work manuals	73.3	70	16.7	20	10	3.3	0	0	0	3.3	0	3.3
Reading orders and notices	10	0	3.3	6.7	3.3	10	20	16.7	16.7	16.7	46.7	50
Reading work reports	3.3	0	16.7	10	26.7	40	30	13.3	16.7	23.3	6.7	13.3
Reading charts and diagrams	0	0	30	20	23.3	30	16.7	26.7	13.3	16.7	16.7	6.7
Reading maps and work plans	0	26.7	3.3	40	6.7	16.7	23.3	6.7	40	6.7	26.7	3.3
Reading technical remarks from logs	16.7	26.7	36.7	36.7	20	23.3	6.7	6.7	13.3	6.7	6.7	0

Thus, the English course design should evidently provide training in reading activities such as interpreting work manuals, including decoding information from charts and diagrams. As most of sample work manuals analyzed in this study showed, charts and diagrams constitute an equal part of the manual as texts.

Shop supervisors and junior technicians were also asked to rank the most frequent writing activities carried out in their workshops. The most frequent writing activity carried out in the workshop was identified as writing technical remarks in logs, followed by filling in forms.

Technicians seem to spend very little time of their work on writing work reports and writing work plans in their work shops although there are such activities.

Table 22 indicates the frequency of speaking activities believed to be carried out in English. As indicated above these opinions need to be treated with care, as the researcher found little evidence of English being used in the workshops currently for oral communication. Regarding speaking activities, discussing technical problems was considered the most frequent activity while reporting orally to supervisors about their work was said to be a less frequently engaged in speaking activity.

Table 22 Frequency of speaking activities in English in workshops as ranked by shop supervisors (SS) and junior technicians (JT) in percentages:

Table 22	The most frequ. SS	JT	The 2nd most frequ. SS	JT
Reporting orally about your work	23.3	10	76.7	90
Discussing technical problems	76.7	90	23.3	10

Shop supervisors and junior technicians were asked if the junior technicians had any difficulties in the various subskills of reading, writing, listening and speaking while performing their duties in their workshops.

In general, as the findings indicate, the respondents judged that the junior technicians had only some or little difficulty in any of the reading skills suggested. Yet, shop supervisors tended to judge that the junior technicians had more difficulty than the junior technicians claimed they had.

Table 23 Estimation of difficulties encountered by junior technicians in reading manuals as made by shop supervisors (SS) and junior technicians (JT) in percentages:

Table 23

	V.much difficulty		Much difficulty		Some difficulty		Little difficulty		No difficulty	
	SS	JT	SS	JT	SS	JT	SS	JT	SS	JT
Reading carefully to understand detailed information in the manual	13.3	6.7	16.7	6.7	26.7	23.3	36.7	30	6.7	33.3
Reading to get the main information from the manual	20	3.3	6.7	3.3	36.7	26.7	16.7	30	20	36.7
Reading to understand the general idea of the text or manual	20	6.7	30	6.7	16.7	20	26.7	33.3	6.7	33.3
Reading quickly to find a particular piece of information	26.7	3.3	6.7	10	23.3	26.7	36.7	36.7	6.7	23.3

Regarding difficulties in speaking, the majority of respondents judged that the junior technicians had some difficulty in reporting orally in English. However, the shop supervisors claimed that the junior technicians had much more difficulty in this speaking skill than their junior technicians did, as Table 24 indicates.

Junior technicians were judged to have slightly less difficulty in asking and answering questions in discussions and in briefings than in giving oral reports. This judgement seems realistic possibly because giving oral reports is a relatively longer discourse which requires greater confidence while asking and answering questions is relatively simpler. In reality as explained above, there is at present relatively little English spoken in the workshop since confidence in using spoken English is low and technicians are more comfortable operating in Amharic.

Table 24 Estimation of difficulties encountered by junior technicians in speaking in English as made by shop supervisors (SS) and junior technicians (JT).

Table 24	V.much difficulty		Much difficulty		Some difficulty		Little difficulty		No difficulty	
	SS	JT	SS	JT	SS	JT	SS	JT	SS	JT
Giving oral reports	13.3	3.3	26.7	13.3	30	40	23.3	26.7	6.7	16.7
Asking and answering questions in discussions and briefings	3.3	3.3	16.7	6.7	43.3	36.7	30	33.3	6.7	20

The data suggests that junior technicians are more reluctant to evaluate themselves than their supervisors, perhaps because it is a self evaluation in which they prefer to see themselves in a positive way.

Shop supervisors and junior technicians were also asked to evaluate the extent to which junior technicians had difficulty in listening.

As Table 25 summarizes the findings, the majority of shop supervisors evaluated their junior technicians to have much or some difficulty in understanding spoken explanations and instructions while the majority of junior technicians judged themselves to face little or no difficulty.

Table 25 Assessment of listening difficulties encountered by junior technicians as made by shop supervisors (SS) and junior technicians (JT) in percentages:

Table 25	V.much difficulty		Much difficulty		Some difficulty		Little difficulty		No difficulty	
	SS	JT	SS	JT	SS	JT	SS	JT	SS	JT
Understanding spoken instructions	0	3.3	13.3	0	40	16.7	33.3	30	13.3	50
Understanding spoken explanations	3.3	0	16.7	6.7	36.7	13.3	26.7	40	16.7	40

Table 20 Frequency of writing activities in English workshops as ranked by shop supervisors (SS) and junior technicians (JT) in percentages:

Table 20

	Most frequ.		2nd most frequ.		3rd frequ.		4th frequ	
	SS	JT	SS	JT	SS	JT	SS	JT
Writing work Reports	6.7	16.7	23.3	26.7	40	33.3	30	23.3
Filling in forms	40	6.7	40	20	13.3	56.7	6.7	16.7
Writing technical remarks in logs	40	53.3	33.3	40	13.3	3.3	13.3	3.3
Writing work plans	16.7	23.3	6.7	13.3	30	6.7	46.6	56.7

The two groups of respondents were asked to rank the frequency of listening activities carried out in the workshops. The following results were obtained.

Table 21 Frequency of listening activities in English workshops as ranked by shop supervisors (SS) and junior technicians (JT) in percentages:

Table 21

	The most frequ.		The 2nd most frequ.	
	SS	JT	SS	JT
Listening to briefings, instructions	60	56.7	40	43.3
Listening to advice or help from fellow technicians or supervisors about technical problems	40	43.3	60	56.7

As Table 21 indicates, both shop supervisors and junior technicians ranked listening to briefings and instructions as the most frequently engaged in listening activity in English. Listening to advice or help from fellow technicians or shop supervisors about technical problems was considered the 2nd most frequently engaged in activity.

Table 26 Assessment of writing difficulties encountered by junior technicians as made by shop supervisors (SS) and junior technicians (JT) in percentages:

Table 26	V.much difficulty		Much difficulty		Some difficulty		Little difficulty		No difficulty	
	SS	JT	SS	JT	SS	JT	SS	JT	SS	JT
Describing/reporting the work they have done	3.3	0	23.3	13.3	26.7	13.3	26.7	43.3	20	30
Explaining technical problems	10	0	20	3.3	43.3	20	13.3	50	13.3	26.7
Filling in forms	10	0	10	13.3	16.7	13.3	30	23.3	33.3	50

As discussed above, junior technicians regard themselves to have been performing their duties without difficulty in English. However, since there is a clear indication from other respondents of the existence of difficulty in the various work activities, the improved course should train aircraft students in the various sub-skills necessary for these job activities.

5.12 The nature of the work manuals and technical handouts

The researcher studied samples of the aircraft technicians' work manuals and aircraft students' technical course materials in order to identify the major communicative functions and notions that technicians would need to interpret and to identify the major content areas. Reference was made to Van Ek (1975) and Wilkins (1976) in order to provide a baseline inventory of functions and notions and in order to help describe the major content areas.

Samples selected for the study were taken from manuals for engine and airframe maintenance of Antonov-12, a Russian made transport aircraft, Mig-23 jet fighter Mig-21 jet fighter, L-39, a Czech-made jet trainer, Siaimarchetti (SF 260) an Italian made trainer aircraft and Mi-24 Russian made helicopter.

The samples consisted of extracts from manuals for engine and airframe maintenance. However, for some aircraft types, the manuals for engine and airframe maintenance were found compiled in one booklet. So, the analysis was made considering the two part booklet as one text. For example, engine and airframe maintenance manuals for Antonov-12, L-39, Siaimarchetti, Aloutte-III and Mi-24 were analyzed in this way.

Regarding the topic areas covered by the technical manuals, I have given the major identified topics covered by engine and airframe maintenance manuals of Antonov-12 and Mig-23, but I have not done this for the other manuals believing that it would be clear from the similarities of functions and notions among the manuals that the topic areas were similar.

To determine the communicative needs of the aircraft students in their specialist studies, the researcher also undertook an analysis of two sample materials. A handout for teaching "Theory of Engine' and another handout for teaching

"Theory of Airframe" were selected from the four major technical courses.

A similar procedure was applied to the analysis. These texts were studied in order to identify the layout, functions and notions, and major topic areas or themes as was done in technical manuals. After analyzing each manual or handout, findings were indicated in tables, including examples of functions and notions extracted.

The findings of the analysis of Antonov-12 and Mig-23 airctaft maintenance manuals and a handout for " Theory of Engine" are given below. The findings of analyses of all other manuals and handouts are given in Appendix G.

1 Antonov-12

Engine and airframe maintenance manual

Layout

The maintenance manual for engine and airframe of Antonov-12 transport aircraft, is mainly composed of diagrams and texts. The texts are broadly of two types: prose and noteform. A very substantial part of the manual is prepared in short noteform texts while relatively longer prose occurs less frequently:

For example, from the total of 200 pages, 38 pages or 19% is composed of diagrams, 18 pages or 9% is prose and 144 pages or 72% is text in noteform.

Functions

The researcher made an attempt to identify the key communicative language functions in this manual and to extract some examples. As Table 27 shows, in this manual instruction appears to be the most prominent function, followed by condition. Warning is the third most important

language function while definition and sequence occur less frequently.

Table 27 A summary of functions found in a sample taken from Antonov-12 engine and airframe maintenance manual.

Table 27

Function	No of instances identified	Percent of the functions	Examples
Description	12	2.5	The airframe is an all-metal high-wing monoplane with a variable sweep wing and a swept tail unit.
Definition	8	1.7	The Ai-20m engine is an aerial altitude turboprop power plant operating jointly with a variable pitch propeller of left hand rotation.
Instruction	18 8	39.1	Perform the flushing procedure in the following case:
Purpose	40	8.3	To preclude fires, make sure the engine systems are not leaky by running the engine.
Cause	12	2.5	High voltage electricity causes corrosion of metals and deterioration of insulating material.
Result	24	5	Never allow accumulation of dust and dirt on the nuts, otherwise it will be difficult to timely detect defects.
Condition	92	19.1	If corrosion is detected on some of the parts, clean the affected area.
Warning	60	12.5	When carrying out operations pertaining to engine maintenance, do not fail to strictly observe the safety rules.
Rule	24	5	Engine starting and run up should be accomplished with the main wheels chocked.
Comparison	12	2.5	Magneta ignition is superior to battery ignition because it produces a hotter spark at engine speeds.
Sequence	8	1.7	The fuselage is disjointed in the following sequence: 1. Place the aircraft on a flat ground....

Notions

The following are the most prominent notions found to occur in the Antonov-12 engine and airframe maintenance manual. Table 28 below summarizes the notions and their examples. In this manual the notion of time is the most prominent among the ones identified.

Table 28 A summary of notions in Antonov-12 engine and airframe repair manual:

Table 28

Notion	No of instances in 50pp.	Percent of notions	Examples
Location	40	6.7	Check dimension C at two points along the circumference.
Time	248	41,3	Prior to checking, carefully inspect the skin after each flight.
Motion	120	20	If grease does not pass through the hinge, disassemble it.
Temperature	72	12	Aircraft engine may be cooled either by air or by liquid.
Measurement	120	20	Set an angle of 330° on the map angle setter.

Major topic areas

The topic areas are many and all are specifically related to aircraft. The following are some of the many major areas:

1. Aircraft
2. Airframe
3. Pressure
4. Wing
5. Fuel System
6. Engine operation
7. Tools
8. Fire
9. Safety rules
10. Gas
11. Air
12. Rudder
13. Controlling systems
14. Emergency
15. Filter
16. Flight and navigation
17. Altitude
18. Oxygen system
19. Radio telephone
20. Electricity

2 Mig-23

Engine maintenance manual

Layout

Maintenance manuals of this air craft are prepared in two books, engine maintenance and airframe maintenance manuals. The following are the results of an analysis of a sample from the engine maintenance manual.

The two major constituents of the manual are diagram and text. The text is written in a combination of prose and noteform. From 180 total pages of engine maintenance manual, 24 pages or 13.3% is in diagram form, 4 pages or 2.2% is prose, and 152 pages or 84.4% is noteform text.

Functions

As table 29 shows, the following are the most common functions identified. The table summarizes the functions found in a sample from Mig-23 aircraft engine maintenance manual.

Table 29 A summary of functions in Mig- 23 engine maintenance manual.

Table 29

Functions	No of instances in 45pp.	Percent of functions	Examples
Sequence	80	14.4	Unpack the engine in the following sequence. 1. screw four nuts of the bolts holding the container to the bottom, etc.
Description	64	11.6	A depression created by the exhausting gases allows the values to open and repeat the cycle.
Definition	4	0.7	The fixed wing section is the part to which the movable wing section is joined and is made of hard metal construction.
Comparison	8	1.4	Parts made from magnesium alloys are less resistant to corrosion than parts made from other materials.
Purpose	32	5.8	To reduce friction, flouroplastic spacers are riveted to pressed-down stops of the fixed and movable panels.
Reason	12	2	Since exhaust gases are both toxic and very hot, considerable care must be exercised in maintenance of the exhaust system.
Result	20	3.6	When the engine is kept inoperative for a long time under tropical climate conditions, they (oils) absorb moisture and are attacked by microorganisms.
Rule	68	12.3	The grease should have high antifriction characteristics.
Instructions	120	21.7	Install the engine in conformity with the aircraft maintenance instructions.
Warning	68	12.3	It is strictly prohibited to lower, lift or adjust hydraulic jacks after removal of the panels.
Condition	52	9.4	If the coating is damaged up to the metal, apply one layer of primer AK-070.
Directions	24	4.3	Inspection of the fine oil filter is to be carried out as follows.

Notions

The following are the most frequent notions found in a sample from the manual of Mig-23 engine repair.

Table 30 A summary of notions in Mig- 23 engine maintenance manual:

Table 30

Notions	No of instances	Percent of notions	Examples
Location	20	6	The top and bottom of this part of fuselage are provided with access hatches closed by covers.
Time	80	25.3	Degrease the damaged place with clean non-ethylated gasoline and allow the parts to dry within 15 to 20 minutes.
Motion	32	10.1	The force from pneumatic cylinder 28 is transmitted through a system of rods and bellcranks.
Temperature	56	17.7	Allow it to dry within a hour at a temperature or 12 to 35°C.
Measurements	128	40.5	The fuel pressure should be within 100 to 120 kgf/cm^2.

Major topic areas

The following are the major topic areas in the Mig-23 engine maintenance manual.

1. Fuel system
2. Safety rules
3. Power supply sources
4. Engine operation
5. Pressure
6. Temperature regulation
7. Oil
8. Cooling system
9. Ignition
10. Oxygen system
11. Speed
12. Air
13. Filter
14. Measurements

3 Mig-23

Airframe repair manual

Layout

As with the engine maintenance manual, the airframe repair manual is also comprised of two major components, diagram and text. The texts are in prose and note form. Therefore, 56 pages out of the total of 400 pages, or 14% is in diagram form. Approximately 90 pages or 22.5% of the manual is written in relatively longer prose while 254 pages or 63.5% is written in note form.

Functions

The following are the most common language functions met by technicians while reading this manual. As has been noted for other manual types above, instruction is the most common communicative function.

Table 31 A summary of functions in Mig-23 airframe maintenance manual:

Table 31

Function	No of instances	Percent of function	Example
Description	44	3.6	In the course of operation, the airframe is subject to various effects which might cause different troubles.
Definition	76	6.2	The movable wing section is the section which changes the sweep angle from 16° to 70°.
Classification	20	1.7	Constructionally and technologically the airframe is divided into the following main parts:
Comparison	4	0.4	The pressure in the bellow of the absolute pressure controller is greater than the atmosphere.
Purpose	88	7.2	Rotate the lower screw of the support to force the engine up.
Cause	8	0.8	Sun rays, moisture, active gases, duct and dirt cause destruction of protective coating.
Rule	52	4.3	Pipes which are to be installed on the engine should be free from twisting.
Instruction	575	47.6	Remove the rubber caps and plugs from the open ends of the pipelines.
Warning	68	5.6	It is forbidden to detach the covers of the access hatches from the fuselage using any levers, lest the covers might be distorted.
Sequence	200	16.6	When deprocessing the aircraft, do as follows: First, shift...
Condition	52	4.3	If torching occurs in the turbo starter exhaust pipe, crank the turbo starter without waiting for the HP rotor to come to a standstill.
Direction	20	1.7	To bring the jut nozzle flaps to the ground idle position, do the following:

Notions

The following notions have been identified as the major ones in this manual. As Table 32 shows, the notion of location is the most frequently used one.

Table 32 A summary of notions in Mig-23 airframe maintenance manual:

Table 32

Notion	No of instances	Percent of notions	Examples
Location	164	38	The lower central part located beneath the fuel tank serves for passage of electrical pipelines.
Time	44	10.5	While inspecting, pay special attention to condition of riveted seams.
Motion	36	8.6	In this case broken rivets will jump out of their holes.
Measure	88	20.9	Use feeler gauge set No.2 to make sure there is no clearance in point "T".
Temperature	48	11.4	In case of sub-zero ambient temperature, it is necessary to heat the engine front casing.
Quantity	40	9.5	It comprises thirteen lateral frames, including the following heavy frames.

Major topic areas

The following are major topic areas dealt with in repairing the airframe of Mig-23 jet fighter

1. Airframe
2. Wing
3. Electricity
4. Air
5. Power plant
6. Maintenance
7. Fuel system
8. Systems
9. Hydraulic
10. Fire
11. Cooling and blowing
12. Take off and landing
13. Braking

As can be observed from the preceding tables, and tables given in appendix G, all the maintenance manuals have a similar nature. They are broadly composed of diagrams and texts, the texts in most cases indicating both prose and note forms. Although not a prominent feature, charts and tables are constituents of some manuals.

The manuals are also similar in the range and prominence of the functions and notions they employ. The most prominent functions to be interpreted from the manuals are 'giving instruction,' and 'explaining purpose'. Other

crucial communicative functions that technicians need to be able to interpret are 'explanations of rules', 'warnings','explanations of cause and effect', 'reason and result' 'condition' and 'sequence'.

Regarding language notions all technicians, seniors as well as juniors, need to be able to interpret the concepts given above and in Appendix G. But most importantly, they need to be able to interpret and communicate the concepts of 'location','time', 'measurement', and 'temperature'.

Therefore, these target needs of the learners should be considered within the criteria for the design of any future English course.

An analysis of a sample of technical subject teaching materials was also made. The overall aim of this analysis was to identify the most prominent communicative functions and notions needed in the student's specialist reading studies, so that such functions and notions could be incorporated in the design and teaching of English.

For this sampling , I chose two course materials, a handout for teaching "Theory of Engine" and a handout for teaching "Theory of Airframe". As was done for sample aircraft maintenance manuals, the researcher primarily concerned himself with the layout, functions, notions and major topic areas.

4 Theory of Engine Teaching handout

Layout

This booklet for teaching "Theory of Engine" course is composed of diagrams and text. The text is of two forms, prose and note form. From the total of 86 page 30 pages or 34.9% consist of diagrams, 20 pages or 23.3% are in prose and 36 pages or 41.9% are in note form.

Functions

The following communicative functions were identified as the most frequently used in the training course, "Theory of Engine," handout. The function of describing things or processes appears to be the most prominent language function followed by defining materials and their functions.

Table 33 A summary of functions in "Theory of Engine" handout.

Table 33

Function	No of instances in 86pp.	Percent of function	Examples
Description	150	36.2	Today many of the steam power plants are operated by means of steam produced through nuclear fusion.
Definition	100	24.2	The engine is a device for converting a source of energy to useful work.
Classification	55	13.3	Fuels are classified according to their physical state, as solids, liquids and gases.
Comparison	13	3.1	The engine is more difficult to cool than the four stroke cycle engine, chiefly because the cylinder fires at every revolution of the crankshaft.
Purpose	27	6.5	To be satisfactory for use in an airplane the engine must possess the following characteristics:
Reason	15	3.6	The steam engine is important because it was the first artificial means of power.
Rule	7	1.7	At the intake stroke the intake valve must be open and the exhaust valve closed.
Cause	12	2.9	The heat in turn is converted to work power by means of the engine.
Condition	24	5.8	If the engine is on operation it repeats over and over.
Result	6	1.4	If the grease is soft, the cone will penetrate deeper and give a higher reading.
Instruction	5	1.2	To increase compression rate: 1. Install higher pistons 2. Use longer connecting rods.

Notions

The following are the commonest notions found in this handout.

Table 34 A summary of notions in "Theory of Engine" handout:

Table 34 Notions	No of instances in 86 pp.	Percent of notions	Examples
Location	90	8.7	The lower end of the connecting rod is attached to the crankpin on the crankshaft.
Motion	160	15.5	The up and down movement of the piston is called reciprocating motion.
Time	145	14.1	The first powered flight in an aeroplane was made by the Wright Brothers in December 1903.
Temperature	125	12.1	In a gasoline engine, the heat from compression is not enough to ignite the fuel air mixture.
Quantity	130	12.6	No matter how many cylinders an engine has, whether 1,2,6 or 12, the same actions take place in each cylinder.
Possibility	50	4.8	These laws may be used to explain the operation of an engine.
Measurements	175	17	The capacity of automobile, aircraft and other engines to do work is measured in horse power.
Properties	62	6	A lubricant is any natural or artificial substance having greasy or oily properties which can be used to reduce friction.

Major topic areas

The major topic areas dealt with in this technical course are as follows:

1. Power plants
2. Combustion
3. Heat
4. Energy
5. Measurements
6. Time
7. Operation
8. Carburation
9. Systems
10. Charging
11. Fuel and fuel system
12. Lubricants and lubrication
13. Temperature
14. Jet engines
15. Gas turbine engines
16. Turboprop engines
17. Construction(Engine)

It is clear that any future ESP syllabus for Air Force technician students must base itself firmly within the

topics, functions and concepts needed in the learners' study and work areas. That is, it is essential that the functions and notions most frequently found in the maintenance manuals and technical subject teaching materials, as discussed above, and the content from the major topic areas within which these functions and notions are used, should be reflected in any syllabuses of functions, notions, and themes that may be developed later.

5.13. Findings from the observation

An observation was made on the maintenance work of aircraft technicians to see which English language skills and communicative functions the technicians were actually using on the job.

For this purpose, I observed technicians who were repairing an engine for Antonov-12 and an air frame for Mig-21 jet fighter for a total of 5 hours, and the following are the results.

According to my recording of the activities, technicians were speaking and listening for a total of 3 hours in their work. That is, the technicians spent 60% of their time on speaking activities. However, since discussing involves both listening and speaking both skills may be said to have covered the same amount of time. Regarding the actual use of language, the technicians were not speaking at all in English during my observation, except using English names for the tools and equipment. After my observation I asked the chief mechanics why they preferred using Amharic instead of English. The answer was that in such group work and in order to be sociable, one common language was felt to be needed. It was felt that although English was what was needed for their work, their junior technicians had such serious problems with it that it was not possible for them to communicate other than in Amharic.

The major communicative function types used in the technicians' oral use of language were 'expressing and interpreting instructions', asking for advice and help and responding', suggesting a solution', 'discussing a problem', and 'expressing agreement' and disagreement. The relative frequency of use of the functions were as given in this order. Thus it can be suggested that if students' confidence and proficiency in oral skills in English could be improved, there would be considerably more use made of spoken English in the workshops.

Out of the total of 5 hours of observation, the technicians spent approximately 2 hours on group or individual silent activities. In other words, they used 40% of their total working hours for silent maintenance activity.

The technicians were not observed either reading a manual or writing in a log book during my observation despite responses in the questionnaire which had shown that reading and writing are the most frequently used skills for the job. When I consulted the chief mechanics in the Antonov-12 maintenance shop and asked them why the technicians were not referring to the manual they told me, since they were simply replacing an old engine with a new one, using the manual was not necessary. The technicians could easily fit the parts in their right places because such a repair was a very routine one and they had sufficient experience to work without the help of the manual. They also told me that there was not anything to log in writing during this particular maintenance because they had already logged the type and number of the engine in the record office.

Similarly, the chiefs in Mig-21 shop told me that they had easily located the damaged part in the rear section by disassembling the aircraft and had already started the repair. Therefore, no reference to the manual was required. Moreover, logging could be done after this repair was completed and the aircraft was approved by the quality control experts.

5.14 Interviews

As is discussed in Chapter 4 above, information obtained through interviews was aimed to confirm or crosscheck answers given to questions asked in questionnaires and also to ask questions which were not fairly answered in the questionnaires (See Appendix H).

5.14.1 The English teachers' interview

I planned to conduct the interviews with four English teachers who had already completed the questionnaire. Unfortunately, two of them were not able to come for the interviews and I conducted interviews with only two English teachers. It is recognized that the very small number of respondents can only be used to compare responses with those given in the questionnaire and also with those of the students.

In regard to the students' attitude and motivation, the teachers said that although their students had a reasonably positive attitude to and interest in learning English, their motivation was affected negatively by two major factors:
1. The learners' poor academic background which limited them from following the lesson as satisfactorily as expected.
2. The lack of variety of teaching aids and materials in the training school.

Nevertheless, the teachers said that they continued encouraging the students towards a positive attitude. In relation to what the students thought they would achieve from this English course, the teachers expressed the opinion that the majority of students were purely concerned to pass the course and get employed, although there were a few students who hoped they would be more qualified aircraft technicians and some who desired to be good users of English for broader communication purposes.

Asked which skills were most needed by technicians for

their future jobs, one teacher judged that most emphasis should be placed on speaking, listening, and reading. The other teacher judged most emphasis should be placed on speaking, writing, and vocabulary. However, they agreed that all the skills and vocabulary self development are important.

In questions concerning modes of class organization used, the teachers told me that most of the time students worked on individual or whole class activities which is also confirmed by students in their interview. Regarding other techniques, the teachers did not agree. One teacher told me he had been using some silent reading oral reports and also some problem solving activities while his colleague said he gave oral reports and set written reports but only towards the end of the course. This confirms that the methodology predominant in this school is teacher-centred in general.

Rating their students' level of skill and knowledge, my interviewees judged that students were good at reading, reasonable in listening, but they were weak in writing and very weak in speaking. The students were also evaluated to be interested in learning vocabulary, but poor at retaining it. Here I conclude the cause is most probably the absence of vocabulary learning strategies which would provide a long lasting base for vocabulary knowledge if used.

The teachers' impression was that their students were much more knowledgable about grammar than in using any other skills and knowledge. One teacher said that the students spent a lot of time learning the grammar but they did not have the opportunity for applying it in the actual use of the language, that is, in speech outside the classroom or in the classroom. Furthermore he said that even the grammar learned was at sentence-level which could not enable them to use English confidently in longer discourse.

The researcher asked the interviewees which English language skills and areas of knowledge their students enjoyed. They said their students enjoyed reading, learning

grammar and learning vocabulary most. The students, they said, did not like to speak even with or to their friends due to their own opinions of their weakness in spoken English, and due to their unwillingness to be evaluated or laughed at by other students. Regarding the activities that appealed to students, the teachers answered broadly in complete agreement that asking and answering questions, memorizing the meanings of new words, writing grammar exercises, reading aloud and participating in class discussion' appealed most to them.

5.14.2 The aircraft students' interview

An interview was designed and conducted with two groups of aircraft students (see Appendix I). Five students were randomly selected from those who were in their 4th semester study and 5 students were also randomly selected from the new first year first semester group of aircraft students. A selection of the two groups was made to see if there were any significant differences in responses regarding the students' expectations and perceptions of their learning and target needs. Thus I have obtained the following results.

In regarding to the relevance of their English course to their field, all the students judged that it was very important for their English course to be relevant to their future job and to be based on job tasks. Again all the students said they wanted to achieve proficiency in language sufficient for effective maintenance as their primary occupational goal. The learners were clearly able to see the general objective of the training, but they took the current English course to be relevant just because it was English, the language in which they would eventually be carrying out their jobs. What they could not see was the limitations of the course in terms of helping them to study their technical and academic courses more successfully, and teaching them the language skills needed for their future job.

100% of the students said the best way for them to

learn the language was conversing and solving problems in groups. 90% also said that they liked their teachers to help them to find out their own mistakes rather than telling them all their mistakes, and the majority of them,60%, said they would like their teachers' help for working things for themselves. These findings indicate that the students want to carry out a degree of their own independent learning, which also matches with their responses in their questionnaire where they indicated that the best way to learn was by undertaking tasks in pairs/groups with some teacher control.

In regard to their preferred mode of study, 70% of them said they preferred to study in pairs or groups whereas 30% said they preferred to study in whole class mode most of the time. In this respect they were asked whether how frequently they used such modes of study in class. 60% of them said they were using whole class and individual work modes of learning regularly while 40% said they w ere using group work mode of learning. This finding is in complete agreement with the responses of the teachers.

Concerning the kind of activities they most enjoyed, 80% of the students said they enjoy discussing in English in pairs or groups and solving problems while 10% said they enjoyed reading silently for information or for pleasure and only 10% memorizing grammar rules.

Asked about their preferred vocabulary learning strategies, 70% of the learners said they liked to learn new words by using them to convey meaning, 20% by learning their definitions and 10% by hearing ard seeing them.

Regarding the language skills students most want to improve, 70% of them said they wanted to improve speaking the most, while 20% wanted to improve reading and writing. Only 10% of them said they wanted to improve vocabulary and grammar most.

Students were asked which skills were most frequently

practised in class. 70% of them judged that learning grammar and studying reading passages in class were the most frequent activities while 20% said learning vocabulary was the most frequent activity. All agreed that listening, speaking, and writing were given little or no attention.

Students were asked for their opinions regarding the relative importance of language skills and areas of knowledge for their future job. All the interviewees judged that all the four English language skills were important for their job.

Throughout the interviews there was broad agreement in the answers given by both groups of students, 4th semester and 1st semester. However, when I compared opinions given by English teachers and their students, some contrary views emerged. Firstly, English teachers assume that what they teach their students is what the students like or enjoy learning. In this respect teachers said reading, learning grammar and learning vocabulary were what their students enjoyed most, whereas the majority of their students (70%) said they wanted to learn and improve speaking skills followed by reading and writing.

Secondly,the teachers judged that asking and answering questions, memorizing the meanings of new words, writing grammar exercises and reading aloud appealed to their students but most students said they would like or enjoyed discussing in pairs or groups, solving problems, reading silently for meaning and giving free oral reports.

So, this implies that the skills are taught neither according to the needs nor wants of the learners. Also it is clear that more varied methodological practices could be employed in order to motivate students and encourage more independent learning styles. On the whole, it seems that such modern learning activities and techniques are very neglected in the school, although some attempts are made by some teachers to use a more communicative or interactive approach.

CHAPTER SIX

CONCLUSIONS AND RECOMMENDATIONS

As a result of this study, the researcher has arrived at a number of conclusions which form the basis of certain criteria for the design of a new course for the aircraft technicians of the Ethiopia Air Force. First, a brief summary of the present difficulties is given, then the proposed criteria are discussed.

6.1 Summary of the current situation

The learners are currently not effectively motivated in learning English, primarily due to the following factors:

(a) The course is a repetition of the knowledge areas and the same teacher-dominated methodology that the learners have already experienced in schools.
(b) There is a clear lack of consideration of their wants and preferences in their learning process.
(c) There is a clear lack of relevance of content and focus as shown in their learning materials to their future jobs. Skills are not developed at all.
(d) There is a lack of variety in the learning activities.
(e) There is a lack of variety of teaching aids available or used.
(f) Students do not have complete choice of field of study, since this is made by the organization at least to some extent.

These are, among other things, the main factors for students' demotivation and further contribute to students' poor academic performance and junior technicians' subsequent unsatisfactory job performance in English. Consequently, the learners' expectation has reduced to merely passing of the course and getting employed, rather than being able to use

English in a broader communicative situation. Similarly, the junior technicians' current use of more Amharic for speaking and listening in their work than English and their general problems to handle their reading, writing, and speaking activities in English is the effect of the deficiency of the training they have undergone.

The Air Force has sufficient resources for the design and teaching of a new English course. It has the ability to produce new teaching materials and purchase facilities and equipment to aid language teaching and learning. It has also a positive attitude towards the design of a new programme based on the needs of its technicians for a more successful job performance.

It is within this overall framework that the criteria proposed below should be interpreted.

6.2 Overall findings of target and learning needs analysis

The subject and technical courses require students primarily to use their listening and reading skills. The students need the skills of listening to lectures, asking questions and asking for clarifications when necessary, and making notes from lectures and books. They need to be able to read and understand lecture notes while abilities in working out vocabulary meanings independently are also required to handle their studies successfully.

As far as their future work as aircraft technicians is required, the aircraft students need particular abilities at particular levels in all four skills. More specifically, the learners must have sufficient reading skills to confidently interpret work manuals prepared in both text and non-text forms, that is, complex text plus diagrams, charts, maps, tables, and graphs. They must also have the skill and

confidence to listen to and interpret instructions, and to discuss in English in the process of identifying technical problems and solving them. This means the technicians need to develop both interactive speaking-listening skills and transactional listening skills. They need to develop specific writing skills for writing clear and accurate work reports and technical remarks in logs, skills in which technicians currently lack competence.

It is also clear from the analysis that students feel very deficient in oral skills and strongly desire to improve their proficiency in speaking to enhance their own self esteem as well as provide the confidence to use the language for work purposes.

The students indicated they would like to learn the language in a learning situation which encourages more independent learning where a variety of techniques and activities such as pair or group work, problem-solving activities, silent reading, oral reporting, etc., are used and in which they have a chance to speak and improve in oral skills more.

Therefore, according to the information gathered in my target and learning situation needs analysis, the problem will be best addressed by designing a new course based on the criteria given below.

6.3 Views of language and language learning

The new course should be based on the view that language is primarily for communication and that language learning is a process of communication. Thus particular attention should be paid to the cognitive and affective aspects of the learning process. That is, in order to encourage effective learning on the part of the learners, the

wants and feelings of the learners should be considered.

The learners can be best involved in active information processing activities and best motivated if they are given opportunities for doing tasks either taken from real-life situations, like aircraft repairing or task that approximate to such activities from areas outside the technical field.

The new course should, therefore, be based on a more process-oriented view of language learning than an end-product or goal- oriented approach, focusing on developing skills and strategies for using the language and carrying out their own learning. The course should, furthermore, focus on language use more than form, not by showing how people use language but rather by making the learners learn how to use the language.

6.4 The aims and objectives of the course

The aim of the course should indicate the desired outcome for which the course is taught clearly. The following overall aim is suggested:

"To produce aircraft students with a sufficient level of proficiency and confidence in using English skills and strategies

(a) to be able to complete their studies successfully;
(b) to be able to carry out a range of language activities in order to perform their work as aircraft technicians successfully;
(c) to be able to communicate more successfully in other situations as required."

The objectives of the course should be clearly stated showing specific short term plans for the teaching/learning

process that will enable the learner to attain the general goals. Objectives like the following are suggested:

Students should develop skills and strategies for deducing the meaning and use of unfamiliar lexical items through

a. understanding word formation.
b. contextual clues.
c. prior knowledge

remembering word meanings

understanding and expressing conceptual meaning

understanding information not explicitly stated through making inferences.

understanding and expressing the communicative value(s) (functions) of sentences and utterances.

understanding and expressing relations between parts of a text through lexical cohesion.

getting the main information from a piece of written or spoken discourse.

understanding the general idea in a text or manual.

skimming.

scanning to locate specifically required information.

maintaining and developing oral discourse through agreement, disagreement, asking for clarification, and other ways of negotiating meaning.

translating information presented in texts, diagrams, tables,

etc into oral reporting or writing.

improving interactive and transactional listening skills.

improving skills for writing work reports.

summarizing a text (e.g. lecture, book) by taking notes.

6.5 The syllabus

The syllabus in the new course should be aimed at training students in developing the required communicative skills and strategies to use the language, rather than only learning its systems and rules. Thus it should be what Hutchinson and Waters (1987) would call a skills-centred syllabus, while every effort should be made to make it learning-centred by considering at every stage factors such as interest, motivation, provision for different learning styles, encouragement of independent learning.

The primary organization unit should be the topic. It should be a topic-based syllabus but incorporating sub-syllabuses of functions/notions, skills and strategies for reading, listening, speaking, and writing and vocabulary development and grammar.

The syllabus format might, therefore, look like this:

UNIT 1

Topic	-	Engines.
Communicative functions	-	Description, definition.
Notions	-	Power, temperature
Main skills	-	Integrated, but with primary focus on listening and reading.

Vocabulary	-	Word building techniques, developing lexical sets as related to thetopic.
Language points	-	Derived from structures used in the text.

UNIT 2

Topic	-	Engine installation.
Communicative functions	-	Giving and interpreting instructions, warnings and rules.
Notions	-	Dimension, location, quantity, weight.
Main skills	-	Integrated, but with special focus on reading, listening and speaking,
Vocabulary	-	Guessing word meanings from context; using linguistic and non-linguistic clues, developing topic related lexical sets.
Language points	-	Derived from structures used in the text.

6.6 Content area

The content should be based on the criterion that topics or themes derived from both general and technical English should constitute the syllabus content.

The technical contents or topics must be taken from aviation contexts in general and topics identified and shown in this work (see Appendix G) in particular. General topics should be selected on the basis of their compatibility with the needs and interests of these adult aircraft students.

Both the learning and target needs must be considered in the syllabus. That is, the syllabus objectives should naturally suggest topics that will generate interest and motivation and lead to communication and will at the same time meet identified target needs such as interpreting manuals, developing interactive listening skills and so on.

Thus the syllabus will be at least partially process-oriented in terms of the actual learning process.

6.7 Skills and strategies

To meet the needs of the learners in both subject studies and eventual jobs, as well the perceived lacks, and wants or desires of the students, the new English course should train the students in the four English language skills.

However, reading, listening and speaking skills are the three important skill areas which need the most emphasis. For example, listening and reading are the most important areas in subject studies. Again reading, listening, and speaking are the most necessary skills for the job. Speaking is also the skill indicated by aircraft students as being the one they most want to improve in for their own personal satisfaction, status, etc. as well as to be able to use it to communicate in the workshop.

There should be a balance of work to promote skills and strategies across the skills. As far as reading is concerned, the course should develop skills and strategies such as skimming, scanning, guessing at meanings of new words in context, interpreting charts and diagrams, etc. The main aim should be to help students read with understanding in order to be able to apply what they learn to solve a problem.

The course should develop speaking skills and strategies for negotiating meanings through asking for clarification, reformulating, etc, skills for asking questions in briefings etc.

In the listening skills component, the course should train the learners in a range of interactive listening as well as transactional listening skills and strategies.

The course should also teach the learners to develop greater confidence in active note-making and summarizing, skills for writing short work reports and for writing technical remarks.

6.8 Methodology

In order to achieve more interactive learning and develop a confidence in using skills and strategies and knowledge, the English course should employ the following methodology:

(1) The English teacher should employ a balance of modes of classroom organization including pair and group work in order to make the learning more cooperative and facilitate a variety of interesting learning activities that will motivate students to achieve learning.

(2) The English course should be supported by a variety of teaching aids such as tape recorders, videos, possibly a language laboratory for developing listening skills, etc. More particularly the use of parts of real aircraft to facilitate learning and stimulate students' interest should be encouraged whenever possible.

(3) Techniques like role playing, simulations, etc, should be employed. These can possibly be conducted in the Aircraft

Training School in collaboration with the Aircraft School instructors and using the parts of real aircraft that are available there. It may indeed be possible for the English programme to be linked up partly with aircraft training school courses in order to promote authenticity.

6.9 Language activities

The new course should employ a variety of activities from controlled to task based. These should be authentic in the sense that they have relevance or resemblance to activities which may be performed in the students' subject courses or future job. Others should be selected on the basis that they are believed likely to motivate and stimulate learning. For example:

(1) Reading extracts from manuals and other texts selected for their anticipated interest and motivating influence, discussing and interpreting them and applying what they have learned in carrying out a variety of tasks.

(2) Reading and interpreting diagrams, charts, tables, and maps taken from technical or other fields likely to be of interest to students and carrying out related tasks.

(3) Listening to recorded or simulated briefings, instructions, advice and discussion on solving work-related problems or listening to other texts likely to stimulate interest and carrying out related tasks based on listening activities.

(4) Reporting orally, discussing problem-solving activities in groups, carrying out role plays, debates to develop negotiating skills and strategies on topics of general interest as well as of technical origin.

(5) Writing techical remarks for logs, writing reports, filling in forms, making lecture notes, and notes from books.

6.10 Functions and notions

In the new course, functions and notion identified as key areas in the technical work manuals and subject teaching handouts should be emphasized. These would include language functions such as giving and interpreting instructions, warnings, showing conditions, definitions, descriptions, purpose, result, etc, and notions such as location, temperature, time, motion, etc. (See Section 12 and Appendix G). Additional communicative functions and notions should be identified from other job related discourse and areas of general interest.

6.11 Grammar and vocabulary

Although aircraft students do not come to the Airforce Training School to learn the structural or grammatical aspect of the language but, as this resarch indicates, to learn how to develop strategies for using what they have already learned, they have also indicated that they want to upgrade their knowledge of grammar for communication. Thesefore, the course should give some attention to practising structures through which the intended communication is achieved. However, this language work, while focusing on structural patterns, should focus particularly on how grammatical choices affect meaning.

A vast area of vocabulary is contained both in the students' subject text and work manuals. Since it is not possible to teach all the vocabulary items contained in the work manuals and subject texts, the course should focus on

developing strategies for learning vocabulary to equip the learners with a lasting ability to cope with learning their own vocabulary, rather than trying to teach all the items that cannot practically be taught and may in any case be out of use some day due to rapid developments in the field of technology.

The vocabulary items which are used as examples for vocabulary development strategy training should mainly be taken from the actual work manuals and teaching handouts. Specific attention should be given to the use of sub-technical vocasbulary used with technical senses in context.

Strategies taught for learning vocabulary should include strategies such as understanding the various ways of word formation, and being able to use this knowledge to work out new words, becoming aware of word boundaries and relationships such as those between antonyms/synonyms, etc. Strategies such as guessing meanings of new words from context should be taught as well as helping students to try out different ways of remembering new words.

6.12 Language teaching materials

The materials for teaching English should be in harmony with the syllabus. That is, the materials should be written in accordance with the syllabus to be produced, making use of the findings in this research.

The materials should thus be based on topics derived primarily from technical, but also from general English. The materials should put the greatest emphasis on helping students develop confidence in carrying out communicative tasks involving reading, speaking, listening, and writing to prepare them for their later work.

The materials should be as authentic as possible. They would include exercises on diagrams, charts, tables, maps, and graphs from sources including technical manuals. Authentic materials can also be obtained for developing other skills by taking samples of oral communication from workshop interaction for listening, (e.g. video recordings of discussions during aircraft engine and airframe maintenance), texts from work manuals and subject texts for reading, and log books and other forms for writing lessons. Sample vocabulary items can be taken from work manuals and texts for subject courses.

The materials should make use of a variety of activities to generate more communicative learning. The activities should also be authentic and interesting to the learners. They should encourage more independent learning opportunities and provide opportunities for pair or group work as well as individual work.

Additional recommendations

I finally make a few recommendations to the Airforce and future syllabus and materials developers:

(1) Steps should be taken to enable the preparation of a new English course for aircraft students with immediate effect. The syllabus developers and materials writers should be aware of the criteria developed in this research in order to base their syllabus and materials on the needs and wants of the learners.
(2) The Airforce should exploit its potential resources to make them a primary base for producing a new course, the criteria for which have been given in the concluding part of this work.
(3) The Air force has to provide the best possible learning situation. This requires, among other things, provision

of quiet attractive classrooms and adequate teaching aids. A lot of equipment stored or forgotten in the training school should be made usable until others are purchased, for the implementation of the new course.

(3) Re-oriented teachers. Teachers need to be made aware of recent approaches to ESP teaching and recent theories of language and language learning in order to help them adopt a more learner centred approach to teaching English.

(4) Before admission to the school, students should be proficiency tested to ensure they have the necessary ability for carrying out their English courses. The candidates should be given freedom to choose their own field so that they will be motivated, and achieve satisfactory academic performance and become efficient technicians.

BIBLIOGRAPHY

Abiy Yigzaw (1990) "The Communicative Needs of Students in Ethiopian High Schools", M.A Thesis, Addis Ababa University.

Allen, J.P.B. and Widdowson, H.G (1979) "Teaching the Communicative Use of English ", in Brumfit and Johnson (eds.), The Communicative Approach to Language Teaching. Oxford: Oxford University Press.

Bhatia, A.T.(1986) "Communicative Language Skills and ESP" in Peterson (ed.) (1986), ESP in Practice: Models and Challenges for Teachers. Washington D.C.: United States Information Agency.

Bloor, M. (1984) "Course Design: Identifying the components of a Language Syllabus" in ELT Documents: 117 Common Grounds: Shared Interests in ESP and Communication Studies. Oxford: Pergamon.

Breen, M.P.(1984) "Process Syllabuses for the Language Classroom" in ELT Documents: 118, General English Syllabus Design. Oxford: Pergamon.

Brindley, G.P. (1989) "The Role of Needs Analysis in Adult ESL Programme Design" in Johnson (ed.) (1989) The Second Language Curriculum. Cambridge: Cambridge University Press.

Brumfit, C.J.(1980) Problems and Principles in English Teaching. London: Pergamon

Brumfit, C.J. and Johnson, K. (eds.) (1979) The Communicative Approach to Language Teaching. Oxford: OUP.

Candlin, C. N. et al. (1976) "Doctors in Casualty: Specialist Course Design from Data Base" in International Review of Applied Linguistics v. 3

Dubin, F. and Olshtain, E.(1986) Course Design: Developing Programs and Materials for Language Learning, Cambridge: Cambridge University Press.

Ewer, J.R. and Latorre, G.A (1969) A Course in Basic Scientific English, London: Longman.

Frydenburg, G.(1982) "Designing an ESP Reading Skills Course", in ELT Journal, Vol.36/3, Oxford University Press.

Haile Mehari (1989) " The Attitudes of Students and Teachers Towards the Use of ESP Teaching Material in Technical Schools in Addis Ababa", M.A. Thesis, Addis Ababa University.

Haile Micheal Aberra (1992) Questionnaires from Forthcoming Doctoral Dissertation, Addis Ababa University.

Holden, S. (ed.) (1977) English for Specific Purposes, London: Modern English Publications.

Holliday, A. and Cooke, T. (1982)" An Ecological Approach to ESP" in Waters (ed.) Issues in ESP: Lancaster Practical Papers in English Language Education, Vol.5 Pergamon pp 124-141.

Holmes, J. (1982) "Some Approaches to Course Design" Working Paper No. 7, Brazilian ESP Project.

Hutchinson, T. et al. (1979) "An English Language Curriculum for Technical Students" in Lancaster Practical Papers in English Language Education, Vol.2, Institute for English Education, University of Lancaster.

Hutchinson, T. and Waters, A. (1992) Some (Mis)guiding Principles of EST.(Unpublished Manuscript) pp. 1-3.

Hutchinson, T. and Waters, A. (1982) "Creativity in ESP Materials" in Issues in ESP: Lancaster Practical Papers in English Language Education, Vol.5 Pergamon.

Hutchinson, T. and Waters, A.(1984) "How Communicative is ESP?" in ELT Journal, Vol.38/2, Oxford University Press.

Hutchinson, T. and Waters, A.(1984) Interface: English for Technical Communication. Hong Kong: Longman.

Hutchinson, T. and Waters, A.(1987) English for Specific Purposes: A Learning Centred Approach. Cambridge: Cambridge University Press.

Johnson,K. (1982) Communcative Syllabus Design and Methodology. Oxford: Pergamon.

Kennedy, C. and Bolitho, R.(1984) English for Specific Purposes. London: Macmillan.

Kerr,L. (1977) "English for Special Purposes" in Holden (ed.), English For Specific Purposes. London: Modern English Publications.

Mackay, R. and Mountford, A.(eds.) (1978), English for Specific Purposes. London: Longman.

McDonough, J.(1984) ESP in Perspective: A Practical Guide. London: Collins.

Morris, B.(1983), "The English Language Communicative Needs of Addis Ababa University Students " M.A. Thesis, Addis Ababa University.

Munby, J. (1978) Communicative Syllabus Design. Cambridge: Cambridge University Press.

Peterson, P.W. (ed.)(1986) ESP in Practice: Models and Challenges for Teachers. Washington D.C.: United States Information Agency.

Prabhu, N.S.(1987) Second Language Pedagogy. Oxford: Oxford University Press.

Richards, J.C (1985) The Context of Language Teaching. Cambridge: Cambridge University Press.

Richards, J.C and Rodgers, T.S (1986) Approaches and Methods in Language Teaching: A Description and Analysis. Cambridge: Cambridge University Press.

Richterich, R. and Chancerel, J. (1980) Identifying the Needs of Adults Learning a Foreign Language. Oxford: Pergamon.

Robinson, P.(1991) ESP Today: A Practitioner's Guide. Prentice Hall.

Selinker, L. et al. (eds.) (1981) English for Academic and Technical Purposes. Newbury House.

Strevens, P. (1971) "Alternatives to Daffodils" in C.I.L.T. Reports and papers No. 7 pp.7-11

Strevens, P. (1977) New Orientations in the Teaching of English. Oxford: Oxford University Press.

Strevens, P. (1980) Teaching English as an International Language: From Practice to Principle. Oxford: Pergamon.

Swan, M. (1985) "A Critical Look at the Communicative Approach 2" ELT Journal, Vol. 39/2, pp.76-87.

Tarone, E. and Yule, G.(1989) Focus on the Language Learner. Oxford: Oxford University Press

Trim, J.L.M. et al. (1980) Systems Development in Adult Language Learning: A European Unit Credit System for Modern Language Learning by Adults. Oxford: Pergamon.

Trimble, L. (1985) English for Science and Technology: A Discourse Approach. Cambridge: Cambridge University Press.

Van EK,J. (1975) Systems Development in Adult Language Learning. Strasbourg: The Council of Europe.

White, R.V. (1988) The ELT Curriculum: Design, Innovation and Management. Oxford: Blackwell.

Widdowson,H.G (1981) "English for Specific Purposes: Criteria for Course Design" In Selinker, L.et al. (eds.) English for Academic and Technical Purposes. Newbury House.

Widdowson,H. G. (ed.) (1979) Reading and Thinking in English. Oxford: Oxford University Press.

Widdowson, H.G (1983) Learning Purpose and Language Use. Oxford: Oxford University Press.

Widdowson, H.G (1990) Aspects of Language Teaching. Oxford: Oxford University Press.

Wilkins, D.A (1976) Notional Syllabuses. Oxford: Oxford University Press.

Wilkins, D.A (1979) "Grammatical, Situational and Notional Syllabuses" in Brunfit and Johnson (eds.) (1979) The Communicative Approach to Language Teaching. Oxford: Oxford University Press.

Wilson, J. (1986) "General Principles" in Harper (ed.) (1986) ESP for the University, ELT Documents 123, Oxford: Pergamon.

Wingard, P. (1971) "English for Scientists at the University of Zambia" in C.I.L.T. Reports and Papers No. 7 pp. 53-63.

Willmott, M.B. (1987) Modern Perspectives in Teaching Enlish as a Foreign Languaage. Douglas: Domino Books.

APPENDIX - A

A Questionnaire for Aircraft Students of The Ethiopian Air Force Training School

Dear Respondent,

The purpose of this questionnaire is to use the answers as data for some research leading to a Master's degree in Teaching English as a Foreign Language (TEFL). The advantage to the Air Force Training School is that the results of the research may help to improve the quality of the English courses offered to Aircraft Students.

You will not be asked to write your name. This is to make sure that your answers will be confidential. So, you should try to be as open and frank as possible in your answers to the questions, and your answers should be TRUE and HONEST.

Please attempt all the questions, and read the suggested options carefully before giving your answers.

Thank you.

Part One
Background information

1. Please give the following information about yourself in the spaces provided below:

Sex ..... Age .....
Academic level (before entering the Air Force Training School) .....
Year of study at the Air Force School.....

2. Was this field of study your first choice? Please tick:
( ) Yes ( ) No

3. If your answer to Q.2 was **No**, what was your first choice (i.e. your preferred choice of study) ? .....
.....

Part Two

Information about the current teaching/ learning situation at the Air Force School.

4. Please rank how often you make use of the following English language skills and areas of knowledge for learning other courses at the Air Force School.

Please use the following scale and circle a number 1,2,3,4, or 5 for each item:

5= Very frequently used
4= Frequently used
3= Sometimes used
2= Rarely used
1= Never used

4.1 Listening	5	4	3	2	1
4.2 Speaking	5	4	3	2	1
4.3 Reading	5	4	3	2	1
4.4 Writing	5	4	3	2	1
4.5 Vocabulary	5	4	3	2	1
4.6 Grammar	5	4	3	2	1

5. Which of the following English language skills and areas of knowledge are given most emphasis in your English class now? Please rank the following in order of emphasis by writing 1-6, with 1 being the most emphasized and 6 the least.

1= Most emphasised
2= 2nd most emphasised
3= 3rd most emphasised
4= 4th most emphasised
5= 5th emphasised
6= Least emphasised

5.1 Listening ----------
5.2 Speaking ----------
5.3 Reading ----------
5.4 Writing ----------
5.5 Vocabulary ----------

5.6 Grammar ----------

6. How often do you need to do any of the following activities in English during your other courses at the Air Force School, (i.e. courses other than your English course)?

Please rank each activity using the following scale and circle each answer 1,2,3,4,or 5.

5= Very frequently needed
4= Frequently needed
3= Sometimes needed
2= Seldom needed
1= Never needed

Reading activities in English

6.1	Reading textbooks.	5	4	3	2	1
6.2	Reading handouts.	5	4	3	2	1
6.3	Reading aircraft manuals.	5	4	3	2	1
6.4	Reading test items.	5	4	3	2	1
	Writing activities in English					
6.5	Making lecture notes.	5	4	3	2	1
6.6	Making notes from books.	5	4	3	2	1
6.7	Writing reports, essays.	5	4	3	2	1
6.8	Writing other assignments.	5	4	3	2	1
6.9	Writing test answers.	5	4	3	2	1
	Listening activities in English					
6.10	Listening to lectures.	5	4	3	2	1
6.11	Listening to class discussions.	5	4	3	2	1
6.12	Listening to teacher explanations.	5	4	3	2	1
6.13	Listening to teacher questions.	5	4	3	2	1
6.14	Listening to teacher instructions.	5	4	3	2	1
	Speaking activities in English					
6.15	Asking and answering questions.	5	4	3	2	1
6.16	Giving oral reports.	5	4	3	2	1
6.17	Participating in whole class discussion.	5	4	3	2	1
6.18	Participating in pair/group discussion.	5	4	3	2	1

7. Which of the following modes of classroom organization best describes the way your teacher organizes classroom learning of English now?

Please use the following scale to rank each way of organizing the class and circle 1,2,3,4, or 5 for each answer:

5= Very frequently used
4= Frequently used
3= Sometimes used
2= Rarely used
1= Never used

7.1	Individual work.	5	4	3	2	1
7.2	Pair work.	5	4	3	2	1
7.3	Small group work.	5	4	3	2	1
7.4	Whole class, (eg. with teacher working on exercises, asking and answering questions.)	5	4	3	2	1

8. Which teaching aids does your English teacher use regularly? Please circle each item 1,2,3,4 or 5 as follows:

5= Very regularly used
4= Regularly used
3= Sometimes used
2= Rarely used
1= Never used

8.1	Teacher's books and Student's books.	5	4	3	2	1
8.2	Samples of Maintenance manuals.	5	4	3	2	1
8.3	Tape recorders.	5	4	3	2	1
8.4	Models (e.g. model aircraft).	5	4	3	2	1
8.5	Videos	5	4	3	2	1
8.6	Realia (e.g. parts of real aircraft).	5	4	3	2	1
8.7	A language laboratory.	5	4	3	2	1
8.8	An overhead projector.	5	4	3	2	1

9. Describe your present language learning situation. For each choice circle either (a) or (b).

9.1	a) Noisy classroom	b) Quiet classroom
9.2	a) Too many students in your class	b) Appropriate number of s's
9.3	a) Dark classroom	b) Light classroom
9.4	a) Dull classroom	b) Interesting classroom (e.g. with displays)
9.5	a) Uncomfortable furniture	b) Comfortable furniture

10. To what extent are you satisfied with the following in learning English at this school now?

Use the following scale and circle your answer.

5= Very satisfied
4= Satisfied
3= Neutral
2= Dissatisfied
1= Very dissatisfied

10.1	Teacher's classroom management.	5	4	3	2	1
10.2	Teacher's encouragement to you.	5	4	3	2	1
10.3	Teacher's relationship with class.	5	4	3	2	1
10.4	Variety of learning activities.	5	4	3	2	1
10.5	Library facilities.	5	4	3	2	1
10.6	Relation of topics to your future job.	5	4	3	2	1
10.7	Relation of English language skills to your future job.	5	4	3	2	1
10.8	Relevance of passages and exercises in English textbooks to your future job.	5	4	3	2	1
10.9	How interesting the learning activities are	5	4	3	2	1

Part Three

Information about the kind of English and English language skills you would like to learn at the Air Force School.

11. Which of the following English Language skills and areas of knowledge do you particularly want to improve during the English course at the Air Force School?

Rank your answers using a scale from 1 to 6, with 1 being the skill you most want to improve and 6 being the skill you feel you least want to improve.

11.1 Listening ------
11.2 Speaking -------
11.3 Reading --------
11.4 Writing -------
11.5 Vocabulary -----
11.6 Grammar --------

12. Which of the following ways of organizing the class do you think would help you to learn best? Please circle ONE of the following:

a) Highly teacher controlled. Students have little freedom.
b) Largely teacher controled. Students have some freedom.
c) Some teacher control. Students also carry out tasks in pairs/groups.
d) Students work in pairs, groups most of the time.
e) Students work completely independently of the teacher in pairs/groups/ individually.

13. Rank the following according to what you would prefer to learn in your English course. Use the following scale:

1. Most preferred
2. 2nd choice
3. Least preferred

13.1 General English (i.e. the kind of English appropriate for communication in any situation or social activity .....
13.2 Technical English (i.e. English specifically related to aviation actitities) .....
13.3 A balance between topics from General and Technical English .....

Part Four

Information about the English Language needs you expect you will have in the target job.

14. In what working situation do you think you will **use English most** when you have completed your training? (Please rank in order of importance by writing 1-3, 1 being the most important and 3 being the least important.)

14.1 In the workshop ------
14.2 In the office --------
14.3 In flight ------------

15. Which do you think you will **need most** in your future job? (Please rank in order of importance by writing 1-3, 1 being the most important and 3 the least)

15.1 General English --------
15.2 Technical English ------
15.3 A balance between General and Technical English ------

16. Please add any other comments regarding the English courses given in this school.

APPENDIX- B

A Questionnaire for English Teachers
The Ethiopian Air Force Training School

Dear Respondent,

The purpose of this questionnaire is to use the answers as data for some research leading to a Master's Degree in Teaching English as a Foreign Language (TEFL). The aim is to provide information that will enable the Air Force to improve the quality of the English courses given in to Aircraft Students in this school.

You will not be asked to write your name. This is to make sure that your answers will be confidential. Therefore, you should try to be as open and frank as possible in your answers to the questions, and your answers should be TRUE and HONEST.

Please attempt all the questions, and read the suggested options carefully before giving your answers.

NOTE: The questions are entirely about Aircraft Students and English courses for them.

Thank you.

Part One
Information about the respondent

1. Please give the following information about yourself in the spaces below.
   Nationality.....
   Highest degree held .....
   Country degree earned .....
   Area of specialization .....
   Number of years of teaching English in the Air Force
   .....

Part Two
Information about the present syllabus and materials

For each of the following questions, please circle the number that corresponds to your degree of satisfaction.

5= Very satisfied
4= Satisfied
3= Neutral
2= Dissatisfied
1= Very dissatisfied

2. To what extent are you satisfied with how directly and clearly the the aims (long-term plans) of teaching english are stated in the syllabus you use?
   5 4 3 2 1

3. To extent are you satisfied with how directly and clearly the objectives (short-term plans) of teaching English are stated in the syllabus you use? 5 4 3 2 1

4. How satisfied are you with the relevance of the syllabus to the English the learners will use in their future jobs?
   5 4 3 2 1

5. How satisfied are you with the relevance of the English teaching materials you use to the learners' target needs for English?
   5 4 3 2 1

Part Three

Information about the actual teaching learning situation in the Air Force School.

6. How satisfied are you with emphasis given in the teaching materials to the following?

(For each item, please circle 1,2,3,4 or 5)

5= Very satisfied
4= Satisfied
3= Neutral
2= Dissatisfied
1= Very dissatisfied

6.1 Listening skills.	5	4	3	2	1
6.2 Speaking skills.	5	4	3	2	1
6.3 Reading skills.	5	4	3	2	1
6.4 Writing skills.	5	4	3	2	1
6.5 Grammar.	5	4	3	2	1
6.6 Vocabulary.	5	4	3	2	1

7. Which of the following do you emphasize the most in your classroom teaching?

(Please rank from 1 to 6, 1 being the skill you emphasize most and 6 the one you emphasize least).

7.1 Listening skills .....
7.2 Speaking skills .....
7.3 Reading skills .....
7.4 Writing skills .....
7.5 Grammar .....
7.6 Vocabulary .....

8. How do you rate the English language proficiency of your aircraft students at the end of the English course?

(Please circle 1,2,3,4 or 5).

5= Very good
4= Good
3= Average
2= Weak
1= Very weak

8.1	Reading	5	4	3	2	1
8.2	Writing	5	4	3	2	1
8.3	Speaking	5	4	3	2	1
8.4	Listening	5	4	3	2	1
8.5	Grammar	5	4	3	2	1
8.6	Vocabulary	5	4	3	2	1

9. How frequently do you use the following modes of classroom organization?

(Please circle 1,2,3,4 or 5).

5= Very frequently
4= Frequently
3= Sometimes
2= Rarely
1= Never

9.1 Individual work.	5	4	3	2	1
9.2 Pair work.	5	4	3	2	1
9.3 Small group work	5	4	3	2	1
9.4 Whole class, (e.g. working on exercises with the teacher, asking and answering questions etc.	5	4	3	2	1

10. Which of the following ways of organizing the class do you think would help your students to learn best? Please circle ONE of the following:

a) Highly teacher controlled. Students have little freedom.
b) Largely teacher controled. Students have some freedom.
c) Some teacher control. Students also carry out tasks in pairs/groups.
d) Students work in pairs, groups most of the time.
e) Students work completely independently of the teacher in pairs/groups/ individually.

11. How frequently do students do the following language learning activities in your classroom?

(Please circle 1,2,3,4 or 5).

5= Very frequently
4= Frequently
3= Sometimes
2= Rarely
1= Never

11.1 Asking and answering questions orally.	5	4	3	2	1
11.2 Solving problems through group discussion.	5	4	3	2	1
11.3. Repetition.	5	4	3	2	1
11.4 Controlled speaking.	5	4	3	2	1
11.5 Giving oral reports.	5	4	3	2	1
11.6 Listening to lectures and making notes.	5	4	3	2	1
11.7 Listening to and understanding your questions, instructions, etc.	5	4	3	2	1
11.8 Reading aloud.	5	4	3	2	1
11.9 Reading silently for meaning.	5	4	3	2	1
11.10 Controlled writing of grammar and vocabulary exercises.	5	4	3	2	1
11.11 Writing dictations	5	4	3	2	1
11.12 Writing reports, essays,	5	4	3	2	1
11.13 Learning vocabulary meanings.	5	4	3	2	1
11.14 Learning grammar rules.	5	4	3	2	1

12. Which teaching aids do you use regularly?

(Please circle 1,2,3,4 or 5).

5= Very regularly
4= Regularly
3= Sometimes
2= Rarely
1= Never

12.1 Teacher's books and student's books.	5	4	3	2	1
12.2 Extracts from maintenance manuals	5	4	3	2	1
12.3 Tape recorders.	5	4	3	2	1
12.4 Models (e.g. model aircraft).	5	4	3	2	1
12.5 Videos.	5	4	3	2	1
12.6 Realia (e.g. parts of real aircraft).	5	4	3	2	1
12.7 A language laboratory.	5	4	3	2	1
12.8 Overhead projectors.	5	4	3	2	1

13. How satisfied are you with your aircraft students' motivation to learn English?

(Please circle the number that corresponds to your degree of satisfaction).

5= Very satisfied
4= Satisfied
3= Neutral
2= Dissatisfied
1= Very dissatisfied

14. How positive or negative is your aircraft students' attitude towards the English course?

(Please circle the number corresponding to their attitude)

5= Very positive
4= Positive
3= Neutral
2= Negative
1= Very negative

15. Do you think that the time allocated for teaching English to aircraft students is sufficient?

(Please circle the number corresponding to your opinion).

5= It is very insufficient
4= It is insufficient
3= Neutral
2= It is sufficient
1= It is too much

Part Five

Information about the current English courses and opinions about ways of improving them

Below are a number of statements and questions about the cuttent english courses and ways of improving them.

Please rate the following 2 statements on a 5 point scale as follows.

5= strongly agree
4= Agree
3= Neutral
2= Disagree
1= Strongly disagree

16. The current English sylabus and materials need to be improved.

5 4 3 2 1

17. If your answer to q. 15 above is '5' or '4' ; Please comment on the following:

The improved syllabus and materials should facus on:

17.1 Developing Knowledge of grammar.	5 4 3 2 1
17.2 Developing Vocabulary	5 4 3 2 1
17.3 Improving reading skills	5 4 3 2 1
17.4 Improving listening skills	5 4 3 2 1
17.5 Improving writing skills	5 4 3 2 1
17.6 Improving speaking skills	5 4 3 2 1

18. What do you thin the basis of the improving course should be?

(Please rank the folloeing in order of importance, 1 being in your opinion the most important and 3 the least)

18.1 Texts or topics from Technical English (I.e. from areas that are job-related e.g. to aircraft engines, Airframes. etc.) ....

18.2 Texts or topics from general English .....

18.e A balance between texts and topics from General English and Technical English .....

19. Do you think you would be able to teach English through specialized texts, (e.g. texts about airframe maintenance) ?

(Please cicle the letter of your choice)

(a) Yes

(b) If the materials are well prepared

(c) No

20. Please add any other comments you have regarding the English courses given to aircraft students in the Air Force.

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APPENDIX-C

A Questionnaire for Academic and Technical Subject Teachers The Ethiopian Air Force Training School

Dear Respondent,

The purpose of this questionnaire is to use the answers as data for some research leading to a Master's Degree in Teaching English as a Foreign Language (TEFL). The advantage to the school is that the results of the research may help to improve the quality of the English courses offered to Aircraft Students.

You will not be asked to write your name. This is to make sure that your answers will be confidential. So, you should try to be as open and frank as possible in your answers to the questions, and your answers should be TRUE and HONEST.

Please attempt all the questions, and read the suggested options carefully before giving your answers.

Thank you.

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Part One
Information about the Respondent

1. Please give the following information about yourself:

Nationality. .....
Qualification. .....
Country degree earned.....
Area of specialization /subject you teach .....
Number of years of teaching in the Air Force .....

Part Two
Information about the current teaching /learning situation.

2. How do you rate the **overall English language abilities** of your aircraft students? Please circle 1,2,3,4 or 5.

5. Very satisfied
4. Satisfied
3. Neutral
2. Dissatisfied
1. Very dissatisfied

3. How do you rate the English language proficiency of your aircraft students in the following skill and knowledge areas? Please use the following scale and circle a number 1,2,3,4 or 5 for each item.

5= Very good
4= Good
3= Average.
2= Weak
1= Very weak

3.1	Reading skills	5	4	3	2	1
3.2	Writing skills.	5	4	3	2	1
3.3	Speaking skills.	5	4	3	2	1
3.4	Listening skills.	5	4	3	2	1
3.5	Grammar.	5	4	3	2	1
3.6	Vocabulary.	5	4	3	2	1

4. Please rank how often your students need to make use of the following English language skills for learning the subject you teach at the Air Force School. Please use the following scale and circle a number for each item.

5= Very frequently used
4= Frequently used
3= Sometimes used
2= Rarely used
1= Never used

4.1	Listening	5	4	3	2	1
4.2	Speaking	5	4	3	2	1
4.3	Reading	5	4	3	2	1
4.4	Writing	5	4	3	2	1

5. Please rank how often your students need to do any of the following English Language activities during your course at the Air Force School. Please use the following scale and circle a number 1,2,3,4 or 5 for each item.

5= Very frequently used
4= Frequently used
3= Sometimes used
2= Rarely used
1= Never used

Reading activities in English

5.1	Reading textbooks	5	4	3	2	1
5.2	Reading handouts/notes copied into exercise books	5	4	3	2	1
5.3	Reading test items	5	4	3	2	1

Writing activities in English

5.5	Copying lecture notes	5	4	3	2	1
5.6	Making notes from books	5	4	3	2	1
5.7	Writing reports, essays	5	4	3	2	1
5.8	Writing other assignments	5	4	3	2	1
5.9	Writing test answers	5	4	3	2	1

Listening activities in English

5.10	Listening to teacher's explanations	5	4	3	2	1
5.11	Listening to other students in class discussions	5	4	3	2	1
5.12	Listening to other students in pair/group discussions	5	4	3	2	1
5.13	Listening to teacher's questions	5	4	3	2	1
5.14	Listening to teacher's instructions	5	4	3	2	1

Speaking activities in English

5.15	Asking and answering questions	5	4	3	2	1
5.16	Giving oral reports	5	4	3	2	1
5.17	Participating in whole class discussion	5	4	3	2	1
5.18	Participating in pair/group discussion	5	4	3	2	1

6. Please add any other comments, regarding the English language skills your students need for your course.

APPENDIX-D

A Questionnaire for Sponsors (Employers)
The Ethiopian Air Force

Dear Respondent,

The purpose of this questionnaire is to use the answers as data for some research leading to a Master's Degree in Teaching English as a Foreign Language (TEFL). The advantage of the research to the Air Force is that the results of the research may help to improve the quality of the English courses offered to Aircraft Students.

You will not be asked to write your name. This is to make sure that your answers will be confidential. So, you should try to be as open and frank as possible in your answers to the questions, and your answers should be TRUE and HONEST.

Please attempt all the questions, and read the suggested options carefully before giving your answers.

NOTE: The questions are entirely about **Aircraft Students** and English courses for **them**, and the job of **aircraft technicians.**

Thank you.

Part One

Information about the situation in which Aircraft Technicians use English.

1. What are the major divisions of work in which your aircraft technicians operate, using English? (Please specify, e.g. airframe repair, engine repair, etc.)

   1. .....

   2. .....

   3. .....

   4. .....

   5. .....

   6. .....

2. How often do your aircraft technicians use English in each of the following situations?

   Please use the following scale and circle 1,2,3,4 or 5 for each item.

   5= Very regularly
   4= Regularly
   3= Sometimes
   2= Rarely
   1= Never

2.1	In the workshop.	5	4	3	2	1
2.2	In the office.	5	4	3	2	1
2.3	In flight.	5	4	3	2	1

Part Two

Information about English language skills needed by aircraft technicians.

3. Which of the following English language skills is most important for your aircraft technicians?

   (Please rank them by circling 1-4, 1 being the most important and 4 the least.

3.1	Listening.	4	3	2	1
3.2	Speaking.	4	3	2	1
3.3	Reading.	4	3	2	1
3.4	Writing.	4	3	2	1

Part Three
Information about Junior Aircraft Technicians' proficiency in using English for their work.

4. How do you rate the English language proficiency of your Junior Aircraft Technicians (technicians with less that 6 years' experience) in the following English language skills?

(Please circle 1,2,3,4 or 5)

5= Very good
4= Good
3= Average
2= Weak
1= Very weak

4.1 Listening skills.	5	4	3	2	1
4.2 Speaking skills.	5	4	3	2	1
4.3 Reading skills.	5	4	3	2	1
4.4 Writing skills.	5	4	3	2	1

Part Four
Information about the current English courses and suggestions for ways of improving them.

Please rate each of the following using the following 5 point scale from 5, for a statement which you strongly agree with, to 1, for a statement that you strongly disagree with.

5= Strongly agree
4= Agree
3= Neutral/uncertain
2= Disagree
1= Strongly disagree

5. The current english syllabus and materials need to be improved. 5 4 3 2 1

6. If your answer to Q.5 above is 5 or 4, do you think the improved syllabus and materials should focus on:

6.1 Developing knowledge of grammar.	5	4	3	2	1
6.2 Developing vocabulary.	5	4	3	2	1
6.3 Improving reading skills.	5	4	3	2	1
6.4 Improving listening skills.	5	4	3	2	1
6.5 Improving writing skills.	5	4	3	2	1
6.6 Improving speaking skills.	5	4	3	2	1

7. Please rank the following in order of importance by writing 1,2 or 3, 1 being the most important and 3 the least.

In my opinion the basis of the improved course should be:

7.1 Texts or topics from Technical English (i.e. from areas that are job-related e.g. to aircraft engines, airframes, etc).....

7.2 Texts or topics from General English (i.e. from areas that are of general interest).....

7.3 A balance of texts and topics from General English and Technical English.....

Part Five
Information about students' choice of field.

8. How are your aircraft students assigned to this field?

(Please circle one letter.)

(a) Students choose the field for themselves.
(b) The Air Force chooses the field and assigns them.
(c) Other way (Please specify).....

.....

9. Please add any further ~~comments~~ comment you have regarding the training of Aircraft Students and their English ~~language~~ needs for their jobs.

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APPENDIX-E

A Questionnaire for Shop Supervisors
The Ethiopian Air Force

Dear Respondent,

The purpose of this questionnaire is to use the answers as data for some research leading to a Master's Degree in Teaching English as a Foreign Language (TEFL). The advantage of the research to the Air Force is that the results of the research may help it to improve the quality of the courses offered to Aircraft Students.

You will not be asked to write your name. This is to make sure that your answers will be confidential. So, you should try to be as open and frank as possible in your answers to the questions, and your answers should be TRUE and HONEST.

Please attempt all the questions, and read the suggested options carefully before giving your answers.

NOTE: The questions are entirely concerned with the work of Aircraft Technicians.

Thank you.

Part One

Information about the situation in which aircraft technicians use English.

1. What is the central or specific duty in your workshop for which the technicians need English? (e.g. engine repair, airframe repair, etc. Please specify .....
.....

2. How often do your Aircraft Technicians use English in the following situations? Please use the following scale and circle 1,2,3,4 or 5 for each item.

5= Very regularly
4= Regularly
3= Sometimes
2= Rarely
1= Never

2.1 In the workshop.	5 4 3 2 1
2.2 In the office.	5 4 3 2 1
2.3 In flight.	5 4 3 2 1

3. How often do your aircraft technicians use English with the following people? Please use the following scale and circle 1,2,3,4 or 5 for each item.

5= Very regularly
4= Regularly
3= Sometimes
2= Rarely
1= Never

3.1 With shop supervisors.	5 4 3 2 1
3.2 With other technicians.	5 4 3 2 1
3.3 With inspectors.	5 4 3 2 1

Part Two

Information about English language skills and activities needed in the workshop.

4. Which of the following English language skills do your aircraft technicians need most in your workshop?

(Please rank them by writing 1, 2, 3 or 4 in the space provided, 1 being the most important and 4 the least.)

4.1 Listening .....
4.2 Speaking .....
4.3 Reading .....
4.4 Writing .....

5. Which of the following reading activities do your aircraft technicians engage in most in English?

(Please rank them by writing 1-7 in the spaces provided, 1 being the most important and 7 the least.)

5.1 Reading work manuals .....
5.2 Reading orders and notices .....
5.3 Reading work reports .....
5.4 Reading charts and diagrams .....
5.5 Reading maps and work plans .....
5.6 Reading technical remarks from logs .....
5.7 Others (Please specify) .....
.....

6. Which of the following writing activities do your aircraft technicians engage in most in English in your workshop?

(Please rank them in order of importance by writing 1-4 in the spaces provided, 1 being the most important and 4 the least)

6.1 Writing work reports .....
6.2 Filling in forms .....
6.3 Writing technical remarks in logs .....
6.4 Writing work plans .....
6.5 Others (Please specify) .....
.....

7. If your technicians need listening skills in English, which of the following listening activities do they engage in most?

(Please rank them in order of importance by writing 1,2, or 3 in the spaces provided, 1 being the most important and 3 the least.)

7.1 Listening to briefings, instructions .....
7.2 Listening to advice or help from fellow technicians or supervisors about technical problems .....
7.3 Others (Please specify.) .....
.....

8. If your technicians need speaking skills in English, in which of the following speaking activities do they engage most?
(Please rank them in order of importance by writing 1,2 or 3 in the spaces provided, 1 being the most important and 3 the least).

8.1 Reporting orally about their work .....
8.2 Discussing technical problems .....
8.3 Others (Please specify) .....
.....

Part Three

Information about difficulties encountered by Junior Aircraft Technicians in using English.

9. In your opinion, how good or how weak do you feel most of your Junior Technicians (technicians with less than 6 years experience) are in the following English language skills? (Please circle 1,2,3,4 or 5.)

5= Very good
4= Good
3= Average
2= Weak
1= Very weak

9.1 Listening skills.	5	4	3	2	1
9.2 Speaking skills.	5	4	3	2	1
9.3 Reading skills.	5	4	3	2	1
9.4 Writing skills.	5	4	3	2	1

10. If your Junior Technicians face difficulties in reading a manual in English, how much difficulty do they face in the following? (Please circle 1,2,3,4 or 5)

5= Very much difficulty
4= Much difficulty
3= Some difficulty
2= Little difficulty
1= No difficulty

10.1 Reading carefully to understand detailed information in the manual. 5 4 3 2 1

10.2 Reading to get the main information from the manual. 5 4 3 2 1

10.3 Reading quickly to find out the general idea of part of a manual. 5 4 3 2 1

10.4 Reading quickly to find a particular piece of information. 5 4 3 2 1

10.5 Others (Please specify) .....
.....
.....

11. If your Junior Aircraft Technicians face difficulty in speaking in English, how much difficulty do they face in the following? (Please circle 1,2,3,4 or 5.)

5= Very much difficulty
4= Much difficulty
3= Some difficulty
2= Little difficulty
1- No difficulty

11.1 Giving oral reports.	5	4	3	2	1
11.2 Asking and answering questions in discussions, briefings.	5	4	3	2	1

11.3 Others (Please specify.) .....
.....

12. How much difficulty do your Junior Aircraft Technicians face in listening to English in the following? (Please circle 1,2,3,4 or 5.)

5= Very much difficulty
4= Much difficulty
3= Some difficylty
2= Little difficulty
1= No difficulty

12.1 Understanding spoken instructions.	5	4	3	2	1
12.2 Understanding spoken explanations.	5	4	3	2	1
12.3 Understanding individual words in what is said.	5	4	3	2	1

12.4 Others (Please specify.) .....
.....

13. To what extent do your Junior Aircraft Technicians encounter difficulty in the following while writing in English? (Please circle 1,2,3,4 or 5.)

5= Very much difficulty
4= Much difficulty
3= Some difficulty
2= Little difficulty
1= No difficulty

13.1 Describing/reporting the work they have done.	5	4	3	2	1
13.2 Explaining technical problems.	5	4	3	2	1
13.3 Filling in forms.	5	4	3	2	1

13.4 Others (Please specify.) .....
.....

14. Please add any other comments you have regarding the English language skills needed in your workshop. .....

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APPENDIX-F

A Questionnaire for Junior Aircraft Technicians The Ethiopian Air Force

Dear Respondent

The purpose of this questionnaire is to use the answers as data for some research leading to a Master's Degree in Teaching English as a Foreign Language (TEFL). The advantage of the research to the Air Force is that the results may help to improve the nature and quality of the English courses offered to Aircraft Students.

You will not be asked to write your name. This is to make sure that your answers will be confidential. So. you should try to be as open and frank as possible in your answers to the questions, and your answers should be TRUE and HONEST.

Please attempt all the questions, and read the suggested options carefully before giving your answers.

NOTE: The questions are entirely concerned with the English language skills you need for your duties.

Thank you.

Part One

Information about the situation in which English is used by Aircraft Technicians

1. What is the central or specific duty in your workshop for which you need English? (Please specify.)

.....

.....

2. How often do you use English in the following situations? (Please circle 1,2,3,4 or 5)

5= Very regularly
4= Regularly
3= Sometimes
2= Rarely
1= Never

2.1 In the workshop.	5	4	3	2	1
2.2 In the office.	5	4	3	2	1
2.3 In flight	5	4	3	2	1

3. How often do you use English with the following people? (Please circle 1,2,3,4 or 5 to show frequency of use)

5= Very regularly
4= Regularly
3= Sometimes
2= Rarely
1= Never

3.1 With shop supervisors.	5	4	3	2	1
3.2 With other technicians.	5	4	3	2	1
3.3 With inspectors.	5	4	3	2	1

Part Two

Information about English language skills and activities needed in your workshop.

4. Which of the follcwing English language skills do you need most in your workshop?

(Please rank them in order of importance by writing 1,2,3 or 4 in the spaces provided, 1 being the most important and 4 the least).

4.1 Listening .....
4.2 Speaking .....
4.3 Reading .....
4.4 Writing .....

5. Which of the following reading activities do you engage in most in English?

(Please rank them in order of importance by writing 1-6 in the spaces provided, 1 being the most important and 6 the least.

5.1 Reading work manuals .....
5.2 Reading orders and notices .....
5.3 Reading work reports .....
5.4 Reading charts and diagrams .....
5.5 Reading maps and work plans .....
5.6 Reading technical remarks from logs .....

6. Which of the following writing activities do you engage in most in English in your workshop?

(Please rank them in order of importance by writing 1-4 in the spaces given, 1 being the most important and 4 the least).

6.1 Writing work reports .....
6.2 Filling in forms .....
6.3 Writing technical remarks in logs .....
6.4 Writing work plans .....
6.5 Others (Please specify) .....
.....

7. If you listen, which of the following listening activities do you engage most in English?

(Please rank them by writing 1, 2 or 3 1 being the most important and 2 the least).

7.1 Listening to briefings, instructions .....
7.2 Listening to advice or help from fellow-technicians or supervisors about technical problems .....
7.3 Others (Please specify) .....
.....

8. If you need speaking skills in English, which of the following speaking activities do you engage in most?

(Please rank them by writing 1, 2 or 3 1 being the most important and 2 the least).

8.1 Reporting orally about your work .....
8.2 Discussing technical problems .....
8.3 Others (Please specify) .....
.....

Part Three

Information about difficulties you have encountered in using English.

9. In your opinion, how competent or how weak are you in the following English language skills?

(Please circle 1,2,3,4 or 5)

5= Very good
4= Good
3= Average
2= Weak
1= Very weak

9.1 Listening skills.	5	4	3	2	1
9.2 Speaking skills.	5	4	3	2	1
9.3 Reading skills.	5	4	3	2	1
9.4 Writing skills.	5	4	3	2	1

10. If you face difficulties in reading a manual in English, how much difficulty do you face in the following?

(Please circle 1,2,3,4 or 5).

5= Very much difficulty
4= Much difficulty
3= Some difficulty
2= Little difficulty
1= No difficulty

10.1 Reading carefully to understand detailed information in the manual.	5	4	3	2	1
10.2 Reading to get the main information from the manual.	5	4	3	2	1
10.3 Reading quickly to find out the general idea of part of a text or manual	5	4	3	2	1
10.4 Reading quickly to find a particular piece of information.	5	4	3	2	1

10.5 Others (Please specify) .....
.....

11. If you face difficulties in speaking in English, how much difficulty do you face in the following?

(Please circle 1,2,3,4 ir 5).

5= Very much difficulty
4= Mucyh difficulty
3= Some difficulty
2= Little difficulty
1= No difficulty9

11.1 Giving oral reports.	5	4	3	2	1
11.2 Asking and answering questions in discussions, briefings.	5	4	3	2	1

11.3 Others (Please specify) .....
.....

12. How much difficulty do you face in listening to English in the following?

(Please circle 1,2,3,4 or 5).

5= Very much difficulty
4= Much difficulty
3= Some difficulty
2= Little difficulty
1= No difficulty

12.1 Understanding spoken instructions. 5 4 3 2 1
12.2 Understanding spoken explanations. 5 4 3 2 1
12.3 Recognizing individual words in what is said. 5 4 3 2 1
12.4 Others (Please specify) .....
.....

13. To what extent do you encounter difficulties in the following while writing in English?

(Please circle 1,2,3,4 or 5).

5= Very much difficylty
4= Much difficulty
3= Some difficulty
2= Little difficulty
1= No difficulty

13.1 Describing/reporting the work you have done. 5 4 3 2 1
13.2 Explaining technical problems. 5 4 3 2 1
13.3 Filling in forms. 5 4 3 2 1
13.4 Others (Please specify) .....
.....

Part Four

Below are a number of statements about the current English courses and ways of improving them.

Please rate each of the following on a 5 point scale from 5, for a statement which you strongly agree with, to 1. for a statement that you strongly disagree with.

5= Strongly agree
4= Agree
3= Neutral/uncertain
2= Disagree
1= Strongly disagree

14. The current English syllabus and materials need to be improved. 5 4 3 2 1

15. If your answer to Qu.14 above is '5' or '4', do you think the improved syllabus and materials should focus on:

15.1 Developing knowledge of grammar.	5	4	3	2	1
15.2 Developing vocabulary..	5	4	3	2	1
15.3 Improving reading skills.	5	4	3	2	1
15.4 Improving listening skills.	5	4	3	2	1
15.5 Improving writing skills.	5	4	3	2	1
15.6 Improving speaking skills.	5	4	3	2	1

16. What do you think the basis of the improved course should be?

(Please rank the following in order of importance, from 1 to 3, 1 being the most important, 3 being the least important.)

16.1 Texts or topics from Technical English (i,e. from areas that are job-related e.g. concerning aircraft engines, airframes) .....
16.2 Texts or topics from General English. .....
16.3 A balance of texts and topics from General English and Technical English .....

17. Please add any other comments you have regarding the English language skills you need for your job.

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Appendix G

Analysis of maintenance manuals for Mig-21,L-39, Siaimarchetti (SF 260) Aloutte III, Mi-24, and technical handout for "Theory of Air frame" course

Mig-21

Engine maintenance manual

Layout

As has been seen for other manual types (see section 5.2), the Mig-21 engine maintenance manual is composed of two major components, diagram and text. The text is of two types. They are prose and note form.

Therefore, 40 pages out of the 220 pages, or 9.1% is in prose while 160 pages out of the same total pages, or 72% is written in note form.

Functions

The following are the most frequent language functions most likely to have to be interpreted by the technicians in their Mig-21 engine repair manual. Of the 14 communicative function identified; instruction is the most frequently occurring function. This seems true for all the manuals primarily intended for maintenance. Purpose is the 2nd most frequently occurring communicative function in this particular manual type.

Table 35

Table 35

Function	No. of the times [illegible] from 55pp	Percent of function	Examples
Description	48	4	At after-burner power ratings the engine performance remains stable at speeds and altitudes stated in Book 1.
Definition	30	2.5	Engine P13-300 is a two-spool turbojet furnished with an after-burner and designed for flight installation on aircraft to create thrust in flight
Classification	16	1.3	The distinguishing features of installation and operation of engines equipped with after-burner control box are described in Chapter XV.
Comparison	12	1	In the turbine second stage the gas flow undergoes changes similar to those in the turbine first stage.
Purpose	188	15.5	The purpose of the nozzle diaphragm is to accelerate and direct hot gases onto the blades of the turbine first stage wheel.
Reason	20	1.7	The cabin is ventilated to the atmospheric level, since the atmospheric pressure below 2,000 meters is greater than the pressure in the air below.
Result	40	3.3	The turbo cooler employs the principle of converting part of the energy of air into mechanical energy. In this case, the temperature and pressure of the air at the turbo cooler outlet drop.
Rule	140	11.6	The pilot must keep a close watch on the indications of the following instruments.
Instruction	404	33.4	Install a new transmitter proceeding in the reverse order given above.
Warning	92	7.6	The check holes of the control rod shall not get opened when the rod length is being adjusted.
Condition	72	6	If this time is beyond the limits of 6.01 sec, carry out an adjustment as set forth in section 15.
Directions	52	4.3	The post flight preparation of the engine shall be accomplished by proceeding as follows: 1) check the engine by ear for freedom from extraneous noises. 2) visually inspect the aircraft air intake.
Sequence	72	6	To inspect the blades of the compressor V, VI, VII, and VIII stages, proceed as follows.
Suggestion	24	2	Pumps may be engine or electrically driven.

Notions

The following are the most frequently communicated notions as given in this manual. As the finding in table '36' shows, technicians need to communicate the concept of time very frequently while maintaining the machines

Table 36

Table 36

Notions	No of instances 55 pp.	Percent of notions	Example
Location	100	11.5	From the compressor the compressed air is delivered into the combustion chamber in a continuous flow.
Time	204	23.5	All openings exposed during dismounting of various units shall be closed with temporary caps.
Measurement	172	19.8	Build up pressure of 180 to 210 kg/sq.cm in the hydraulic system.
Temperature	128	14.7	When the free air temperature is below -40°c, warm up the engine with hot air (80°c max.)
Quantity	76	8.8	The engine turbine consists of two stationary nozzle diaphragm assemblies and two rotors.
Motion	88	10.1	The gas flow escaping from the passages between the blades of the turbine second-stage wheel enters the after burner diffuser.
Possibility	44	5	Taxiing may be carried out at any operating rating of the engine.
Colour	4	0.5	The engine plumbing is identified in colour as follows:
Dimension	52	16	Pipelines of up to 10 mm diameter are allowed to be parted not more than 2 mm.

Mig-21

Airframe mainttenance manual

Layout

The major companents of the maintenance manual for Mig-21 airframe are diagram and text. The text is prepared in two forms, prose and noteform.

Thus, out of the total 218 pages, 100 pages or 45.9% is diagram, 30 pages or 13.8% is prose, and 88 pages or 40.4%

Functions

The following communicative functions have been identified as the most frequently occurring in this sample manual. As the summary of functions in Table 37 indicates, the most common communicative functions to be interprted are instouctions and expressing purpose

Table 37

Table 37

Functions	No.of instances in 53pp	Percent of functions	Examples
Description	92	9	The aircraft is powered by one turbo-jet engine, provided with an axial two spool compressors and after burner.
Definition	43	4.2	The airframe is an all-metal mid-wing structure with a delta wing.
Classification	20	2	Group I comprises tank No. 1, the front integral tanks.
Comparison	12	1.2	If the hydraulic pressure drops less than 30 kgf/cm^2 the hydraulic locks block the hydraulic pressure.
Purpose	130	12.7	To reduce the landing run, the aircraft is provided with a boundary layer control system and a drag chute.
Reason	40	3.9	As there is no sliding friction and no, heavily loaded bearings, lubrication is greatly, simplified.
Result	46	4.5	Effectiveness of the aircraft control surfaces and excellent stability of the machine provide for high maneuverability.
Instruction	208	20.3	After the check is over, restore the system to the initial state.
Warning	80	2.8	Never place foreign objects onto the wings and other parts of the aircraft structure.
Condition	100	9.7	If required, it is possible to drain the fuel only from the wing integral tanks.
Direction	24	2.3	To prevent failure of the aircraft equipment, observe the following.
Sequence	112	11	To drain the fuel do the following.

Notions

Table '38' summarizes the notions most likely to be encountered by the technicians while referring to the airframe manual. As the number of instances and their percentages show, the concept of time seems to be communicated the most from the identified ones

Table 38

Functions	No.of instances in 53pp	Percent functions	Example
Location	92	14.6	Fuel from the fuselage tanks is drained through the drain valve located on the pipeline which runs to the engine.
Time	124	19.7	Before the inspection, as well as before proceeding to any work on the aircraft, it is required to take safety measures to exclude accidental firing.
Measurement	84	13.4	At an ambient air temperature above +10°c set the system for supply of hot air.
Temperature	108	17.2	In winter, if the shock absorbers are charged in a warm room, it is required to take into account that at lower air temperature the pressure in the shock absorbers will decrease.
Quantity	52	8.3	There are four internal fuel tanks (No 1, 2, 3 and 4) wing fuel cell and one detachable tank.
Motion	120	19.1	This air is passed along the gas ducts in the port side.
Possibility	48	7.6	Foreign objects may be sucked through the shutters together with the air.

L-39

Engine and airframe maintenance manual

Layout

The engine and airframe maintenance manual for the L-39, (Czech made, trainer aircraft is composed of three major components. From the total of 756 pages 147 pages or 19.4% is diagram, 42 pages or 5.6% is tables and charts. From the same total pages, 105 pages or 13.9% is prose and 462 pages or 61.1% is in noteform.

Functions

The following are the most frequently used communicative functions found in this manual. The researcher read 76 pages, or one tenth of the total 756 pages. 38 pages from engine manuals and 38 pages from airframe manual section were read to identify these language functions

Table 39

Table 39

Functions	No.of instances in 76pp	Percent of functions	Example
Description	15	2.8	The engine ground starting is performed with the use of the APU.
Definition	20	3.7	By the airplane parking is meant the time elapsed since the airplane landing or since the engine run up in the course of scheduled maintenance.
Comparison	14	2.6	Turbine exhaust temperature shows a rise by no means more than 100°C from initial value.
Purpose	55	10.1	In order to reach minimum friction, the moving parts of control system are seated in ball bearings.
Cause	25	4.6	Air brakes are extended by means of an hydraulic cylinder to the deviation of 55° maximum.
Rule	35	6.5	At a time of changing from the main to the emergency fuel supply system the HP rotor speed should not be less than 54.5 percent.
Condition	47	8.7	If some engine malfunctions are detected during operation on the ground it is necessary to shut down the engine.
Instruction	205	37.8	Turn off the anti-icing system only 3 to 5 minutes after leaving the icing zone.
Warning	40	7.4	Never start an engine whose rotors are stiff to rotate.
Classification	15	2.8	Liquid fuels are classified as volatile or non volatile.
Result	19	3.5	Increasing compression ratio increases power output of engine.
Direction	19	3.5	To check the igniter plugs, proceed as follows: 1) Remove the igniter plugs from the flame igniter proceeding as instructed. 2) Switch on the circuit breakers of the ignition.

Notion

The most frequently used notions are given below.

Table 40

Table 40

Notions	No. of inst -ances in 76pp	Percent of notions	Examples
Location	103	15.4	The wing-tip tanks are attached on both ends of the main beam.
Time	158	23.6	Prior to starting the engine, check to make sure that: a) There are no foreign objects in front or aft of the aircraft. b) The aircraft throttle control lever is set in the CUT OFF position
Motion	95	14.2	With the emergency fuel supply system on, the fuel flow to the engine is metered by the throttle.
Quantity	89	13.3	The wing is of independent structure, having three girders with laminar profile of trapezoidal plan.
Quality	20	3	The fin is of trapezoidal shape fixed with near fuselage part.
Temperature in	72	10.8	At air temperature of +5°c and below in case of cloudiness, fog, snow-fall, rain or drizzle, it is necessary to cut the anti-icing system.
Measurement	94	14	Fill oil primer 25-19-02-130 with oil (the amount of oil to be filled into the air starter reduction gear is approximately 120 cu.cm).
Dimension	38	5.7	Overall area of supporting feet is 462 cm sq.

Siaimarchetti (SF 260)
Engine and airframe maintenance manual

Layout.

The engine and airframe maintenance manual of this Italian maide lightest training aircraft is composed of diagram and text. From the total 800 pages, 250 pages, or 31.3% is diagram and 45 pages or 5.6% is prose while 505 pages 63.1% of the whole book is in noteform.

Functions

The following language functions have been identified. They are the most frequent ones in this maintenance manual. As in other manuals, instruction appears to be the most prominent language function encountered by the technicians. Despite its bulkiness, the manual has been written in simple and clear English

Table 41 Summarizes the functions below

Table 41

Functions	No. of instances in 80pp	Percent of function	Examples
Description	75	5.9	From the right air scoop, fresh air is directly ducted to the fresh air selector value.
Definition	63	5	FS (fuselage station) is a horizontal reference designation starting at the nose of the aircraft.
Comparison	54	4.2	Servicing the tire by maintaining correct inflation pressure is the most important job in any tire preventive maintenance program.
Classification	51	4	Classifications of aviation fuel are identified by the following grades.
Purpose	165	13	This chapter is divided into sections to aid maintenance personnel in locating information.
Result	61	4.8	High pressure gas, including air pressure, is dangerous when precautions are not exercised.
Cause	44	3.5	Hydraulic fluid oil may contain tricresol phosphate, which produces paralysis if taken internally.
Reason	33	2.6	Aircraft levelling is required for specific maintenance functions.
Condition	145	11.4	If bad weather conditions exist, or are expected, the aircraft is to be moored.
Instruction	230	18	Place the jacks under the jack pads.
Rule	67	5.2	The aircraft should be on a level surface and protected from wind gusts, preferably in a hangar.
Warning	74	5.8	DURING TOWING DO NOT PUSH ON CONTROL SURFACES AND FREE SKIN PANELS.
Advising	35	2.8	It is recommended that the aircraft be secured in an area tree of contamination from sand, dust or other environmental conditions.
Directions	90	7	To add fluid to the system proceed as follows: a) Remove bleeder bolts from the brakes. b) Connect a plastic tube
Sequence	35	6.9	To level the aircraft longitudinally, proceed as follows: 1) Screw out the two levelling screws 2) Put the levelling rule P/N UTO 855 on the shank of the levelling screws. 3) Deflate the tire or strut of nose or main landing gear.

Notions

The following notions are those that the technicians will most frequently need to interpret of the identified most frequent notions 'location' covers the largest portion.

Table 42

Table 42

Notions	No. of instances in 80pp	Percent of notions	Examples
Location	242	24.6	During flight, external fresh air enters through the air intake and it is conveyed through the air duct hose into the air diffuser tube.
Time	201	20.5	Parking procedures are generally used during good weather conditions.
Motion	125	12.7	The flow of hot and fresh air ducted into the mixing box is controlled by the cabin heat and cabin vent knobs.
Quantity	95	9.7	The quantity of oil in the oil tank in the wet sump of an engine can usually be determined by means of a dipstick.
Measurement	112	11.4	Measurements are to be carried out to the nearest full millimetre.
Temperature	92	9.4	The air cooling system consists of a ram air scoop located on the right forward side of the aircraft.
Dimension	75	7.6	Dimensions are given in metric for overall length, width and height at vertical stabilizer.
Possibility	40	4	The entire aircraft may be lifted by nose and rear jack points to perform removal and installation of wheels.

Aloutte III

Engine and airfrance

Layout

The engine and airframe maintenance manual for Aloutte III French made helicopter plane is prepared in diagram, charts and tables, and in text.
From the total 880 pages, 270 pages, or 33.8% consists of diagrams and 30 pages, or 3.8% of charts and tables. From the given total pages, 500 pages, or 62.5% is text in short noteform. The manual does not contain long prose in its text component.

Functions

The following language functions have been identified as the most frequently occurring and need to be interpreted by the technicians while maintaining this helicopter plane. The language function showing instruction or imperative has been found as the most prominent function in all manual types. similarly, instruction is the most frequent here. But it seems to cover the largest part in the text (67.3% of the most frequent functions).
Table 43

Table 43

Functions	No. of instances in 80pp	Percent of functions	Examples
Description	64	2.6	The floor is coated with a special non-slip paint.
Definition	32	1.3	The special radiators used for this cooling are called inter-coolers.
Comparison	96	3.8	The cabin floor hatch (5) located in the left rear corner of the cabin is of the same construction as the floor proper.
Purpose	208	8.3	Inspect the forward bottom structure for general condition.
Result	24	1	Consequently, the torque valve can be considered to be correct if it is between 1.2 and 1.5m.
Rule	64	2.6	This hole should fall flush with the outboard rib of each stabilizer.
Instruction	1680	67.3	Ensure that every "Champion" nut is in place.
Condition	160	6.4	If a pressure drop is noted, use soapy water to determine the leakage points.
Warning	168	6.7	It is absolutely forbidden to start the engine and run with the cabin supply valve or the "BLEED" position.

Notions

The following are the most prominent notions to be interpreted by the technicians most likely when the job of maintaining an aircraft is performed.

Table 44

Table 44

Notions	No. of instances in 80pp	Percent of notions	Examples
Location	184	13.5	The four retaining screws are threaded into holes provided in the cabin floor.
Time	248	18.2	After changing the lower side panels, carry out sight harmonization.
Motion	128	9.4	These slides permit fore-and-aft movement of the seats.
Quantity	144	10.6	This equipment comprises the control pedestal (12) the three front seats(9) and the rear seat(3).
Quality	56	4.1	The rear upper portion of the body structure is trapezoidal in shape.
Possibility	24	1.8	It is possible that, following a flight report or a leak test, some rework may be required.
Temperature	168	12.4	If the temperature inside the engine cylinder is too great, the fuel mixture will be preheated.
Measurement	200	14.7	Check the tubes for straightness with a cord stretched along two generating lives at 90° starboard. Tube (18) is 1.5 mm thick.
Dimension	208	15.3	Bolt holes in body structure are 8-15 mm.

Mi-24
Engine and airframe maintenance manual

Layout

The engine and airframe maintenance manual for this Mi-24 Russian made helicopter plane is prepared in diagram and chart and in text form.

From the total of 500 pages, diagrams and chart and in text form

From the total of 500 pages, diagrams and charts occupy 200 pages, or 40%, prose occupies 125 pages or 25% and noteform occupies 175 pages or 35%. Thus in this manual a relatively longer proportion of the text is in continuous prose.

Functions

From the total pages (500), 50 sample pages were read and analyzed for language functions. For the purpose of identifying diagram and text, the whole manual was considered.

The following are the most prominent communicative functions used in the manual.

Table 45

Table 45

Functions	No. of instances in 50pp	Percent of functions	Examples
Definition	13	2.2	Igniter is a kind of spark plug used to start the burning in a jet engine.
Description	41	7	The bearings used in aircraft engines are designed to produce a minimum of friction and a maximum of wear resistance.
Comparison	30	5.1	The engine is more difficult to cool than the four-stroke-cycle engine.
Rule	35	6	The pumps removed from the engine for storage or return for overhaul must be subjected to preservation.
Purpose	115	19	To prevent seepages of working fluid from the pump chamber, use is made of seal housing (13) with collar (917).
Cause	15	2.6	An excessively lean mixture may cause an engine to back-fire through the induction system.
Reason	18	3	The engine is difficult to lubricate properly because the lubricants must be introduced with fuel air mixture through the carburettor.
Result	25	4.3	There is a loss of efficiency as a result of the fuel air charge mixing with the exhaust gases and the loss of some of the charge through the exhaust port.
Condition	97	16.6	If the correction was not provided, the main rotor speed would have decreased.
Warning	36	6.1	Never start the engine before checking that all the instruments are in the right positions.
Instruction	124	21.1	Install the shipping blanket cover over the engine.
Sequence	37	6.4	To replace the starter-generator, proceed as follows: 1) Unscrew and remove screws (5) 2) Disconnect the wiring from the starter generator.

Notions

The following are the most prominent notions or concepts identified.

Table 46

Table 46

Notions	No. of instances of notions in Supp	Percent of notions	Examples
Location	150	19.1	The pumping section of the pump consists of (4) impeller (3) mounted on the shaft.
Time	176	22.4	To prevent damage to the pump during transport to protect it against corrosion during storage, the following items are fitted to the pump.
Motion	102	13	Having reached the periphery of impeller (1), the fuel enters the collector-volute (5).
Temperature	97	12.4	Keep the pumps preserved for long-term storage in special depots, where the temperature is maintained not below +10°c and not higher than +35°c.
Measurements	161	20.6	Booster pump (2) draws fuel from fuel tank (1) and forces it at a pressure of 0.6 to 1.7 kg/sq.cm.
Quantity	84	10.7	Provided on the external surface of casing (9) are two bosses with threaded holes.
Dimension	13	1.7	The spare jets of 0.9 and 1.15 mm in diameter are included in the individual set of the regulating pump.

Theory of Airframe teaching handout

Layout

Unlike the aircraft maintenance manuals and "Theory of Engine" handout, this handout is devoid of any diagrams, charts, or tables. It is composed of only a text which is in noteform. The total 40 pages or 100% the material is prepared in a very short noteform text. Nevertheless, this material therefore does not give opportunities to students for practising extracting meanings represented in diagrams and charts.

Functions

The following functions have been identified in this teaching material. the number of functions seems to be smaller than the number of function types found in "Theory of Engine" teaching material as well as maintenance manuals. This is perhaps because the material is written in a very short noteform, even in clauses and phrases after giving the headings at the top of each paragraph. However, describing and defining things are the most frequent functions as also seen in the teaching text of "Theory of Engine".

Table 47

Table 47

Functions	No. of instances in 40pp	Percent of functions	Examples
Description	130	41.3	The air intake is movable and the movement is controlled by YBA-23 series 3.
Definitión	80	25.4	Mig.23 aircraft hydraulic system is composed of two systems that are not connected to each other.
Classification	35	11.1	The flaps are of float type and have three sections.
Purpose	45	14.3	The purpose of the canopy is to pressurize the cabin.
Cause	10	3.2	The reduced density of the atmosphere at higher altitudes. causes the air to have less resistance to passage of electricity.
Condition	15	4.8	If the pedals are in the neutral position the hydraulic pressure flows to both chambers (A and B).

Notions

The following notions have been identified to be the most frequently used in this technical course hand out. As in "Theory of Engine", the notion of 'quantity' is one of the most frequently communicated ideas.

Table 48

Table 48

Notions	No. of instances in 40pp	Percent of notions	Examples
Location	95	15.2	The pressurized cabin is located between frame No. 6 and 11.
Time	100	16	The additional air intake supplies additional air to the engine compressor during ground run-up.
Quantity	112	18	There are four internal fuel tanks (No.1, 2, 3 and 4).
Quality	85	13.6	Annular combustion chamber is a large circular chamber of turbojet combustion.
Measurements	70	11.2	When the wing sweep angle is from 16° to ± 55.2° the stabilizers' deflection angle up or down is ± 10 + 1 degree.
Dimension	32	5.1	The area is given in a metric system.
Motion	130	20.8	The operating fluid from the hydraulic tank comes to the pump through the suction line.

Major topic areas

The major topic areas discussed in teaching and learning "Theory of Airfram" course are given below:

1. Air
2. Airframe
3. pressure
4. Temperature
5. Dimension
6. Measurements
7. Tools
8. Filter
10. Oxygen
11. Hydraulics
12. Aerodynamics
13. Power Plant
14. Fire
15. Fuel
16. Take off
17. wing

Appendix H
Structured English Teacher Interview

1. What is your aircraft students' attitude to the course?
   Are they well motivated?
   Do you encourage a positive attitude?

2. What do your aircraft students think they will achieve by learning English?

3. Which of the skills are most important for your aircraft students in relation to their future job?

a. speaking b. listening
c. reading d. writing
e. vocabulary

4. What opportunities do you give your students for practising in the four language skills?

5. What opportunities do you give students for working alone, in pairs, in groups, or in a whole class activity?

6. What kind of techniques do you use while teaching English in your classroom? For example, do you use, or get your students to discuss, solve a problem, give oral reports, write reports, read silently for meaning, etc?

7. What level of skill and knowledge do your students have in

a. Speaking b. Listening
c. Reading d. Writing
e. Vocabulary f. grammar

8. How much do your students enjoy
Speaking Writing
Listening Vocabulary learning
Reading learning grammar

9. Which activities do you think appeal to your students most?

Discussion in pairs or groups problem solving activities giving free oral reports reading aloud reading silently for meaning writing reports and essays writing grammar exercises memorizing vocabulary meaning asking and answering using new words in order to communicate

10. How much do you encourage a warm friendly relationship with your learners? For example, do you

- Take an interest in them as individuals
- Encourage them to be relaxed, open, or trusting?
- Encourage them to take responsibility for their learning?
- Praise/encourage all students equally?

What do you do about those who learn slowly or make mistakes frequently?

- Encourage them to think for themselves, that is, to try to learn? or do you try to teach them everything they do not know?
- Make the aims of your activities clear? What do you do with some difficult topics or lessons, for example?
- Help your students to use their prior knowledge?
- Set students problems to solve or give them things to learn?
- provide a variety of activities for learning? How do you achieve this because in your case the materials seem emphasize grammar and vocabulary, and reading passages?

11. Please add any comments you have regarding your English course

Appendix I

Structured Aircraft Students Interview

1. To what extent do you think the English course is relevant to
   a. Your studies (e.g Physics, or Maths, or Theory of engine and airframe, ete)?
   b. Your future job, aircraft maintenance?

2. To what extent do you think it is important for your class to be
   a. relevant to future job?
   b. based on job texts?

3. Do you really want to improve your English?
   or are you simply regarding it as something you have to do?
   What do you think you think you will achieve from the course?

4. How do you think you learn best?
   a. by reading and studying by yourself
   b. by conversation/ solving problems in groups?
   c. by memorizing/learning from any notebooks?

5. Do you like the teacher to
   a. Tell you all your mistakes?
   b. help you to find your own mistakes?
   c. Give you plenty of feedback?

6. Do you like the teacher to explain everything?
   or help you to work things out for yourself?
   or get you to talk about your interests?

7. Would you prefer to study (most of the time)
   a. in pairs or groups?
   b. on a whole class? or

c. alone (individually)?

8. How frequently do you use the following ways of learning now?

Pair work Whole class work/activity

Group work Individual work

9. What kind of activities do you enjoy?

a. discussing in English in pairs or groups
b. solving problems
c. Reading silently for information or for pleasure
d. Memorizing grammar rules
e. Reading aloud

10. Do you like to learn words by

a. Seeing them
b. hearing them
c. learning their definitions
d. using new works to convey meaning

11. How would you like the following language learning activities if they were used in the Air Force school?

a. Discussions in pairs or groups
b. problem solving activities
c. Giving free oral reports
d. Reading silently to understand a text
e. Writing reports and essays
f. Memorizing word definitions and working grammar exercises.

12. How frequently do you do them in this school now?

a. Discussions in pairs or groups
b. Problem solving activities
c. Giving free oral reports
d. Reading silently to understand a text
e. Writing reports and essays
f. Memorizing word definitions and working grammar exercises.

13. Which skill do you want to improve most?

Speaking	Writing
Reading	Grammar
Listening	Vocabulary

14. How frequently do you practise these skills now?

Speaking	Writing
Reading	Grammar
Listening	Vocabulary

15. Which one do you think is the most important for your future job

Speaking	Writing
Reading	Grammar
Listening	Vocabulary

16. How important is it for you to have a friendly relationship with your teacher? Say for your class to be enjoyable?

APPENDIX I

AIRCRAFT STUDENTS' INTERVIEW

THE AMHARIC VERSION

1. ይህ አሁን በመሰጠት ላይ ያለው የእንግሊዝኛ ትምህርት ለሚከተሉት ቀረቤታ አለው ብለህ ምን ያህል ትገምታለህ?

   ሀ/ ለጥናትህ ማለትም ለፊዚክስ፣ ሒሳብ፣ ለአይሮፕላን ቴክኒክ ንድፈ ሃሳብ ትምህርትና እንዲሁም ለአይሮፕላን አካል ትምህርት?

   ለ/ ለወደፊት ሥራህ /ለአይሮፕላን ጥገና/?

2. የእንግሊዝኛ ትምህርት ለሚከተሉት አስፈላጊነት አለው ብለህ ምን ያህል ታስባለህ?

   ሀ/ ለወደፊት ሥራህ ቀረቤታ

   ለ/ ከወደፊት ሥራህ ጋር በዝምድና የመማሪያ ጽሑፎች ላይ የተመሠረተ መሆን

3. በእርግጥ የእንግሊዝኛ ችሎታህን ለማሻሻል ትፈልጋለህ? ወይስ መማር ስላለብህ ብቻ እንደምትማረው አድርገህ ነው የምታየው? ከእንግሊዝኛው ትምህርት ምን የምታገኝ ይመስልሃል?

4. እንዴት በበለጠ የምትማር ይመስልሃል?

   ሀ/ በግልህ በማንበብና ማጥናት

   ለ/ በመነጋገር ወይም ችግርን በጋራ በመፍታት /ከሌሎች ጋር በቡድን/?

   ሐ/ በመሸምደድ ወይም ከማንኛውም ማስታወሻ ደብተር ላይ በማንበብ?

5. አስተማሪህ ምን እንዲያደርግልህ ትፈልጋለህ?

   ሀ/ ስህተትህን በሙሉ እንዲነግርህ? ወይስ

   ለ/ ስህተትህን ራስህ እንድታገኝ እንዲረዳህ

   ሐ/ ስለማንኛውም ሥራህ እርማት እንዲሰጥህ

6. አስተማሪህ ሁሉንም ነገር እንዲያስረዳህ ትፈልጋለህ? ወይስ ነገሮችን ራስህ እንድትሠራ እንዲያግዝህ ትፈልጋለህ? ወይስ ስለራስህ ፍላጎት ወይም ደስ ስለሚሉህ ነገሮች እንድታወራ እንዲያረግህ ትወዳለህ?

7. አብዛኛዉን ጊዜ ለመማር የምትመርጠዉ የተኛዉ ነዉ?

ሀ/ ሁለት ሆነህ ማለት በቤቴን?

ለ/ ከጠየላለ ተማሪያች ጋር ? ወይስ

ሐ/ ብቻህን

8. ባሁኑ ጊዜ ምን ያህል አዘወተረህ የሚከተሉትን የመማሪያ መገገደችን ተጠቀ ማለህ?

ሀ/ ሁለት ሆኖ መሥራትን ለ/ በቤቴን መሥራትን

ሐ/ ከጠየላለ ከፍሉ ጋር መሥራትን መ/ በገለ መሥራትን

9. የተኛዉ የመማሪያ ዘዴ ነዉ የበለጠ የሚያስደስተህ?

ሀ/ በአገገለዝኛ በቡቴን መወያየት ለ/ ችገርን በዉይይት መፍታት

ሐ/ በፀጥታ ለመረዳት ወይም ለመዘናኛ ግን በብ

መ/ የሰየሰዉ ወይም የአገባብን ሕግጋት መቸምደዉ

ሠ/ ዉስ ብሉ ማገበብ

10. የአገገለዝኛ ቃላትን መማር የምትወደዉ

ሀ/ በማየት ነዉ ለ/ በመስማት ነዉ

ሐ/ ትርጉማቸዉን በማጥናት ነዉ

መ/ አዲስ ችን ቃላት ሃሳብ አገዲያስ ተሰለፈለህ በመጠም ነዉ

11. የሚከተሉትን የአገገለዝኛ ቃላቷ መማር ከገዉናችን አገዴት ተወዱ ነበር አነሱ በለዮር ጎይለ ት/ቤት [illegible] ወስጥ ቢኖረ ?

ሀ/ የቤቴን ዉይይት ለ/ የችገር መፍታት ዘይቤ

ሐ/ ነፃ የቃለ ገለፃ መ/ አገዴን ነገር ለመረዳት በጸጥታ ማገበብን

ረ/ ፊፖርትና ሰፋ ያለ ጽሑፍ መፃፍ

ሠ/ የቃላት ትርጉምንና የአገባብ ሕግጋት ወይም መለመኛ መሥራትን ወይም መቸምደዉ

12. አነዚህን ባሁኑ ሰዓት በዚህ ት/ቤት ምን ያህል አዘዉተረህ ተጠቀማለህ?

ሀ/ የቤቴን ዉይይት ለ/ የችገር መፍታት ዘይቤ

ሐ/ ነፃ የቃለ ገለፃ ሠ/ ፊፖርትና ሰፋ ያለ ጽሑፍ መፃፍ

ረ/ የቃላት ትርጉምና መቸምደዱና የአገባብ መለመኛያችን መሥራት

13. የተኖውን የአንገሊዝኛ አውቀተ ነው ለማሻሻል በበለጠ የምትፈለገው?

መናገር መፃፍ

ማንበብ የለገባብ / Grammar / አውቀት

ማዳመጥ የቃላት ችሎታ

14. እነዚህን አውቀቶች ምን ያህል አዘውተረህ እየተጠቀምክ ነው በሁኑ ጊዜ በተ/ቤት?

መናገር መፃፍ

ማንበብ የለገባብ / Grammar / አውቀት

ማዳመጥ ቃላት ችሎታ

15. ከነዚህ የአንገሊዝኛ አውቀቶች የተኛ ይመስሉሃል የበለጠ ጠቀሜታ የለሊቸው ለወደፊቱ ሥራህ?

መናገር መፃፍ

ማንበብ የለገባብ / Grammar / አውቀት

ማዳመጥ የቃላት ችሎታ

16. ከአንገሊዝኛ መምህርህ ጋር የሚኖርህ ተረ ወይም ወንድማዊ ትርጠት ምን ያህል ጠቀሜታ ያለው ይመስለሃል?

ለምሳሉ የከፍል ትምህርትህ አስደሳች እንዲሆን?