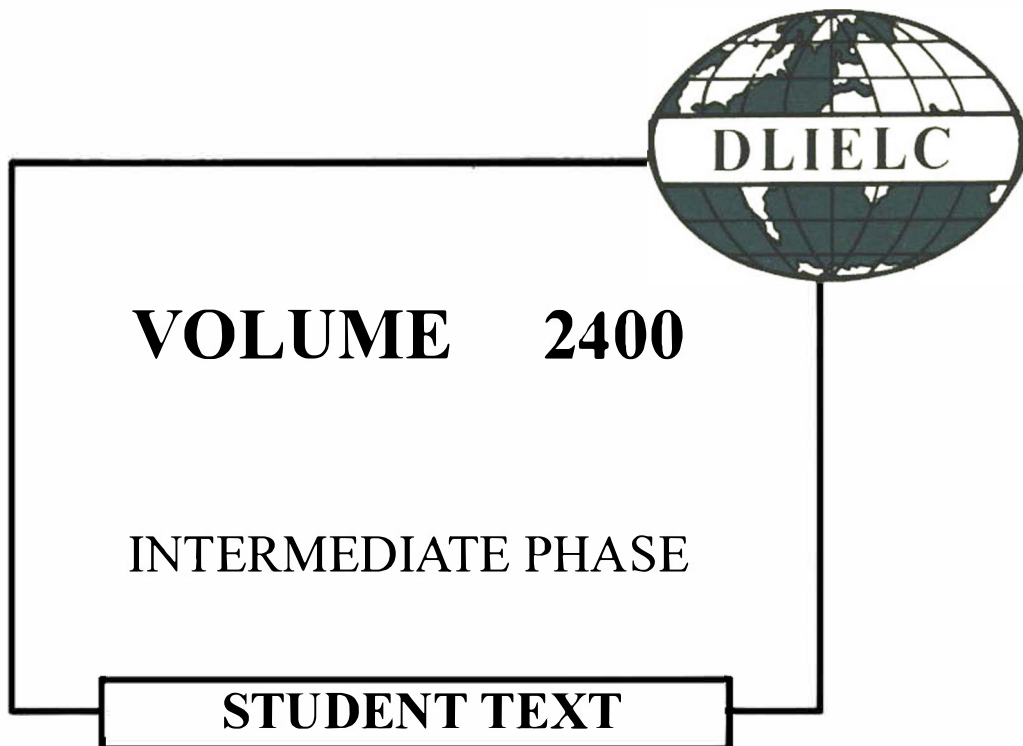




Defense Language Institute
English Language Center
Lackland Air Force Base, Texas

AMERICAN LANGUAGE COURSE

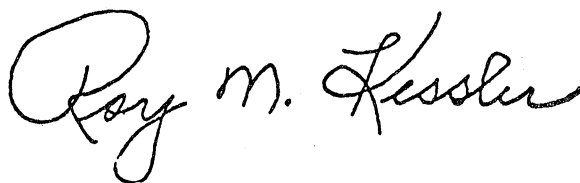


FOREWORD

This Student Text, Volume 2400, is intended to be used as part of the Intermediate Phase of the American Language Course. The American Language Course consists of three phases: the Elementary Phase (Volumes 1100, 1200, 1300, and 1400); the Intermediate Phase (Volumes 2100, 2200, 2300, and 2400); and the Specialized Phase, in which the student concentrates on the technical vocabulary of one of several military specialities such as flying, ordnance, electronics, etc. Each volume of the American Language Course is accompanied by a set of similarly numbered prerecorded tapes which provide aural-oral exercises coordinated with the contents of the volume. These are necessary to the audio-lingual methodology for which the books have been designed. Special tests, workbooks, instructor guides, and other materials have also been prepared for use with these volumes.

The American Language Course is designed for an intensive full-time language training program to provide non-English-speaking military personnel with sufficient skill in English to enable them to pursue further training in various schools of the Department of Defense of the United States of America.

The American Language Course is published by the Defense Language Institute English Language Branch at Lackland Air Force Base, Texas. All inquiries concerning these materials, including requests for authorization to reproduce, should be addressed to the Director, Defense Language Institute, U.S. Naval Station (Anacostia Annex), Washington, D.C., 20390.



ROY M. KESSLER
Colonel, U.S. Army
Director
Defense Language Institute

GUIDE FOR INSTRUCTORS

INTRODUCTION

This is the fourth of four volumes in Intermediate American English for foreign students. It is accompanied by 20 prerecorded tapes and by the Student Workbook 2300/2400. It also includes a list of the 349 terms that every student should have learned upon completion of this volume. Of course, the instruction will not necessarily be limited to these words, but should be extended to the maximum capacity of the students.

OBJECTIVES

The object of the instruction outlined in this volume is to increase the student's ability to use the English language. The instructor will notice that the curriculum is designed to expose a student to the cultural aspect of life in the United States. Understanding in this area will greatly facilitate language learning.

The content of this fourth student text of the intermediate phase of the American Language Course is intended to further increase the student's fluency with vocabulary and structures in American English with emphasis on note taking, pronunciation, and aural comprehension.

METHODS OF PRESENTATION

The units contain dialog material, reading selections, and a variety of drills and exercises. The conversational dialogs should be practiced in classroom and language laboratory drill until the students are able to speak the parts of each dialog easily.

Students generally learn by doing; therefore, the instructor should concentrate on practices involving the students in learning situations rather than on what he is going to explain to them. Be sure your students know the homework they are to do before they come to the next class. Carefully explain the purpose and the pattern of each drill. A confused student often practices errors and wastes time in an unprofitable activity.

PRERECORDED TAPES

Each prerecorded tape provides material for 45 minutes of laboratory instruction. Each tape is numbered to correspond to the classroom unit it supports. The tapes require the student to "participate" by recording his voice in a variety of drills.

You must be certain here, too, that each student knows precisely what he is to do. He should know the signals and what they mean.

The student should also know all vocabulary items and grammatical structure and have some guided practice in pronunciation of new terms so that his practice helps him sharpen his aural comprehension and improve his fluency.

Encourage the student to do the laboratory exercises without using his script,

STUDENT WORKBOOK ASSIGNMENTS

The Student Workbook, Volume 2300/2400, contains homework assignments related to the units in this book and in Student Text, Volume 2300. Note carefully that some of the homework is designed as review of material taught in class, and that some (usually programmed material) is designed as preparation for the class work to come. Be sure the student understands this.

Be sure, too, that the student understands how to use the programmed materials.

Since the programmed materials provide their own answers, it will not be necessary for you to "correct" them. The student should do this himself. It may be wise to skim through a few completed programs early in the first week to be sure the students understand how to respond to them.

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AMERICAN LANGUAGE COURSE

UNIT 2401

OUTLINE AND STUDY OBJECTIVES

DIALOG: REVIEW OF ENGLISH STRUCTURE

DIALOG PRACTICE

REVIEW OF QUESTION WORDS AND POSSIBLE ANSWERS

FLUENCY PRACTICE

PATTERN PRACTICE EXERCISE

SENTENCE-COMBINING PRACTICE

SENTENCE-EXPANSION PRACTICE

TAPE 2401A

TAPE 2401B

UNIT 2401

DIALOG

REVIEW OF ENGLISH STRUCTURE

This unit of instruction contains dialogs and exercises designed to provide practices on question words, question patterns, and statement patterns. Familiar words are used in the dialogs and in the exercises so that the student can concentrate on the pattern. A review of the patterns should aid the student in developing skill in word arrangement. The aim here is to develop skill in using the patterns in speech.

Student A: Sometimes I know every word in a whole paragraph, and yet I understand very little.

Student B: This often happens to a language student. You can also hear a sentence and not understand it although you know every word.

Student A: We don't use the same pattern in my language. That's one thing that makes it so difficult for me to learn English.

Student B: All languages differ in structure or word order. Learning to think in a different pattern is much more difficult than learning vocabulary.

Student A: That's very true. Sometimes a sentence looks like a puzzle to me.

Student B: That is why it is necessary to practice as much as possible. The more often you say something in English, the more natural it becomes.

Student A: I suppose you are right. I need more practice.

Student B: It's hard to talk when you don't know where to put your words.

Student A: I see. I never realized what it takes to learn English.

Student B: You are doing all right. Just practice all the time.

DIALOG PRACTICE

Students read the dialog several times before coming to class. In class, use role-playing to provide practice in asking questions and giving answers. Freedom of making suitable changes in the responses may, of course, be permitted.

CONVERSATION IN THE BARBERSHOP

A: Where are you from?

B: I'm from Colombia.

A: That's in the northwestern part of South America, isn't it?

B: That's right. Colombia is a large country on the west coast.

A: Let's see. What is the capital of your country?

B: The capital of my country is Bogotá.

A: And where is your friend from?

B: He's from Chile, also on the west coast.

A: You are students, aren't you?

B: Yes, we are.

A: What are you studying here?

B: We're studying English.

A: Is English a difficult language to learn?

B: No, it's not too difficult.

A: What seems to be the hardest part?

B: The pronunciation. The letters don't always stand for the same sounds.

A: How long will you be here?

B: We'll be here about seven weeks.

A: Goodbye. Hope to see you again before you leave.

B: Thank you. It was nice to meet you.

REVIEW OF QUESTION WORDS AND POSSIBLE ANSWERS

1. When did you arrive at this base? (come to)

- (a) I arrived here about eight weeks ago.
- (b) Let's see. I came here eight weeks ago.
- (c) I arrived at this base the 15th of January.

2. Where do you live?

- (a) I'm looking for a place to live.
- (b) I live on the base.
- (c) I live in a village near the base.

3. How did you come here?

- (a) I came by car. That is, in my own car.
- (b) I came by train.
- (c) I came by plane.

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4. Why did you come to the Language School?

- (a) I came here to learn more English.
- (b) I came to the Language School to study technical English.
- (c) I came here to prepare for further training.

5. What have you learned so far?

- (a) I've learned a lot of useful expressions.
- (b) I've learned many technical words.
- (c) I've learned to understand spoken and written English much better.

6. Who came with you?

- (a) I came alone.
- (b) Two other students came with me.
- (c) Two friends of mine came with me.

Write an appropriate question for each of the following sentences.

1. John would like to go to the mountains, where it is cooler.
2. The teacher asked many interesting questions.
3. We are going to enter the next phase of training in a couple of weeks.
4. The next phase is called specialized.
5. Joe made a good grade on his final examination.
6. John is from Arizona.
7. I prefer to go by plane.
8. He said his name was Bill.
9. Finally, at about 9 p.m., he called me up.

FLUENCY PRACTICE

Students cross out the unacceptable words in the following sentences and practice saying the sentences for fluency drill.

(What / When) time do you usually get up?

When (do / did) you arrive at this base?

I have breakfast (in / at) the morning.

He has lunch (in / at) noon.

Joe has dinner (in / at) night.

John lives (in / at) San Antonio.

He lives (in / at) 142 Main Street.

He lives (in / on) Main Street.

(Do / Did) you see John yesterday?

Do you (go / goes) to class every day?

PATTERN PRACTICE EXERCISE

Let's practice making changes in a useful pattern. In the blank spaces, write sentences similar to the pattern. Change the italicized words.

1. I would like *to call* my friend.

2. I would like to see *a good movie*.

3. I would like *to talk* to the instructor about this matter.

4. I would like to think about *your suggestion for a while*.

5. I would like *to know* my score on the examination.

SENTENCE-COMBINING PRACTICE

It is easy to build long sentences in English. For example, we say: "John will make satisfactory progress. He studies every day." We can connect these short sentences without making any changes in the word order or the form of the words.

Example:

1. John will make satisfactory progress if he studies every day.
2. John will make satisfactory progress because he studies every day.

We can reverse the order of the short sentences.

Examples:

1. If he studies every day, John will make satisfactory progress.
2. Because he studies every day, John will make satisfactory progress.

Combine the following sentences according to the above examples. Use the connective in parentheses.

1. Joe will make good grades. He studies very much. (if)
 - (a)
 - (b)
2. He will pass the test. He knows most of the material. (because)
 - (a)
 - (b)
3. You can get to town. You can take the bus marked "Broadway." (if)
 - (a)
 - (b)
4. John speaks English quite well. He practices a lot. (because)
 - (a)
 - (b)
5. The engine will start. You turn the switch to "ON." (when)
 - (a)
 - (b)

6. John stepped on the gas. He was on the highway. (as soon as)
- (a)
- (b)
7. I'm going to study technical English. I have finished fundamental English. (after)
- (a)
- (b)
8. Joe called me up. He got home. (as soon as)
- (a)
- (b)

SENTENCE-EXPANSION PRACTICE

Students practice expanding sentences by writing sentences according to the following examples.

1. Cars run.
Old cars run pretty well.
Some old cars run pretty well.
Some of the old cars still run pretty well.
Some of the old cars with good engines still run pretty well.

Airplanes fly.

2. He taught me English.

The instructor taught me and my friend technical English.

The new instructor, who knows his subject well, taught me and my friend a lot of technical English.

He gave me a book.

3. They read a book.

The students read an interesting book.

All of the students read an interesting book on the space age.

Last week all of the students read an interesting book on the space age.

They saw a movie.

TAPE 2401A

Listen.

Let's practice some question words and question patterns. You will hear a question and an answer. Record the question when you hear **. Repeat the correct question when you hear *. For example, you will hear: How did John come? John came by car. ** You should say, How did John come?

Listen and record the questions.

How did John come to work this morning? He came by car. **
How did John come to work this morning? *

Where does Joe live? He lives in the city. **
Where does Joe live? *

When did Bill arrive in this country? He arrived three weeks ago. **
When did Bill arrive in this country? *

Listen.

Let's see if you can remember the answers to the questions you have just heard. Answer the questions when you hear **. Repeat the responses when you hear *.

When did Bill arrive in this country? **
He arrived three weeks ago. *
Bill arrived three weeks ago. *

Where does Joe live? **
He lives in the city. *
Joe lives in the city. *

How did John come to work this morning? **
He came by car. *
John came by car. *

That exercise was a little tricky, wasn't it? We will do a similar one, but this time we want you to listen carefully to the questions and the answers and give the answers later. Do not answer the questions until you hear the signal **

Where do you live? I live at 237 Main Street.
What time do you usually get home? I usually get home at 5:30.
Do you drive or ride with somebody? I drive my own car.
Is the traffic very heavy at that time? No, it's not too bad.

Now answer the questions. Give short answers only. Then repeat the answers when you hear *.

Where do you live? **
at 237 Main Street *

What time do you usually get home? **
at 5:30 *

Do you drive or ride with somebody? **
I drive. *

Is the traffic very heavy at that time? **
not too bad *

Listen carefully to the following paragraph. We will ask questions on the paragraph.
Answer the question when you hear **. Repeat the answer when you hear *

Bill lives on State Street. He leaves his office at 5:30 and gets home at 6:15. It is 20 miles from his place of business to his home. The traffic downtown is heavy, but it's light most of the way.

Now answer the questions. Give short and complete answers.

How is the traffic downtown? **
It's heavy. *
The downtown traffic is heavy. *

How is the traffic most of the way? **
It's light. *
The traffic is light most of the way. *

How far is it from Bill's office to his home? **
20 miles *
It is 20 miles from his office to his home. *

Where does Bill live? **
on State Street *
He lives on State Street. *

At what time does Bill leave his office? **
at 5:30 *
He leaves at 5:30. *

At what time does he get home? **
at 6:15 *
He gets home at 6:15. *

Listen.

As you know, it is very important to learn how to ask questions. The next exercise is designed to provide practice in forming questions. You will hear a statement and the signal **. Then you will ask a question based on the statement. Repeat the question when you hear *

Bill leaves home at 5:30. **
 You should have said, What time does Bill leave home? or At what time does Bill
 leave home? Now repeat the question.
 At what time does Bill leave home? *

John leaves home at 7:15. **
 At what time does John leave home? *

Bill left his office at 5:45 yesterday. **
 At what time did Bill leave his office yesterday? *

Tom lives on Main Street. **
 Where does Tom live? *

It is 15 miles from my house to my office. **
 How far is it from your house to your office? *

The city traffic is very heavy. **
 How is the city traffic? *
 Is the city traffic heavy? *

John gets to work at 7:30. **
 What time does John get to work? *

Let's practice combining some short sentences. For example, you will hear, if/. Then you will hear, I will call him. I have time. You should say, I will call him if I have time. Repeat the responses when you hear *.

if/ I will see her. I have time. **
 I will see her if I have time. *

if/ Joe would go with us. He had time. **
 Joe would go with us if he had time. *

when/ We left. The dinner was over. **
 We left when the dinner was over. *

as soon as/ Tom called me. He arrived in town. **
 Tom called me as soon as he arrived in town. *

where/ I'll put it on top of your desk. You can find it. **
 I'll put it on top of your desk where you can find it. *

why/ He didn't tell me. He came early. **
 He didn't tell me why he came early. *

why/ I don't know. The car won't start. **
 I don't know why the car won't start. *

TAPE 2401B

Listen.

The following exercise is designed to provide fluency development for conversation. The title of this exercise is "A Crucial Problem."

The "707" had just left the Denver Airport. It was heading west over the Rocky Mountains. The upward currents over the mountainous region gave the plane a good shaking once in a while. Flying personnel would call it a "bumpy" ride. One of the passengers, an enlisted man, in a rear seat seemed tense and nervous. He had been smiling, and his face had a normal color. But now he looked very serious, and his face had turned white. His neighbor, a chaplain, on the other side, noticed him and was worried. This chaplain, being a man of religion, thought it was his duty to calm his fellow traveler, the enlisted man.

Listen and complete when you hear **. Repeat the correct responses when you hear *.

The "707" had just left the Denver Airport.	*
The what?	**
"707"	*
had just left where?	**
the Denver Airport	*
The "707" had just left the Denver Airport.	*
It was heading west over the Rocky Mountains.	*
It was heading in what direction?	**
west	*
Where?	**
over the Rocky Mountains	*
It was heading west over the Rocky Mountains.	*
The upward currents over the mountain region gave the plane a good shaking once in a while.	*
The upward what?	**
currents	*
Where?	**
over the mountainous region	*
gave the plane a good what?	**
shaking	*
When?	**
once in a while	*
The upward currents over the mountainous region	*
gave the plane a good shaking once in a while.	*
Flying personnel would call it a "bumpy" ride.	*
What kind of personnel?	**
flying	*
would call it a what kind of ride?	**
"bumpy"	*
Flying personnel would call it a "bumpy" ride.	*

One of the passengers, an enlisted man, in a rear seat, seemed tense and nervous. *
 One of the what? **
 passengers *
 Where? **
 in a rear seat *
 seemed what? **
 tense and nervous *
 One of the passengers, an enlisted man, in a rear seat, seemed tense and nervous. *

He had been smiling, and his face had a normal color. *
 He had been what? **
 smiling *
 and his what? **
 face *
 had a what kind of color? **
 normal *
 He had been smiling, and his face had a normal color. *

But now he looked very serious and his face had turned white. *
 But now he looked how? **
 very serious *
 and his what? **
 face *
 had turned what color? **
 white *
 But now, he looked very serious and his face had turned white. *

His neighbor, a chaplain, on the other side, *
 noticed him and was worried. *
 His who? **
 neighbor *
 was a what? **
 chaplain *

on the other what? **
 side *
 did what? **
 noticed him *
 and was what? **
 worried *
 His neighbor, a chaplain, on the other side *
 noticed him and was worried. *

This chaplain, being a man of religion *
 thought it was his duty to calm his fellow traveler, the enlisted man. *
 This who? **
 chaplain *

being what?	**
a man of religion	*
thought it was his what?	**
duty	*
to what?	**
calm	*
Whom?	**
his fellow traveler	*
the what?	**
enlisted man	*

Listen to the rest of the story now.

In trying to calm his fellow traveler, the enlisted man, the following dialog occurred. Let's listen to their conversation.

Chaplain: You're on your first flight, aren't you?

Enlisted Man: Right, and I'm very nervous.

Chaplain: I noticed that you seemed tense, and your color suddenly changed.

Enlisted Man: I'm wondering if the pilot really knows how to fly.

Chaplain: Well, now my friend, ----- relax. Please *do* relax.
We are all in the hands of our Creator.

Enlisted Man: I know that; but I feel terribly frightened.

Chaplain: He will not call for you until it is your time to die.

Enlisted Man: I know all that, but -----.

Chaplain: Now, my boy, there is no such thing as "But."

Enlisted Man: I know, I know, sir, but what happens if it is time for this pilot to die and not mine?

Now you will hear the lines of the chaplain. Then you will hear a word or two of the lines of the enlisted man. To help you remember his words, finish the enlisted man's lines during the pauses. For example you will hear:

You're on your first flight, aren't you?

Right, _____.

You should say, "Right, and I'm very nervous."

Listen and complete the enlisted man's lines. Do not repeat the lines of the chaplain.
Repeat the correct responses when you hear *.

You're on your first flight, aren't you?

Right,

**

Right, and I'm very nervous.

*

I noticed that you seemed tense, and your color suddenly changed.

I'm wondering

**

I'm wondering if the pilot really knows how to fly.

*

Well, now my friend, ----- relax. Please do relax.

We are all in the hands of our Creator.

I know that;

**

I know that; but I feel terribly frightened.

*

He will not call for you until it is your time to die.

I know

**

I know all that, but-----

*

Now, my boy, there is no such thing as "But."

I know, I know, sir, but

**

I know, I know, sir, but what happens if it is time for the pilot to die and not mine?

*

AMERICAN LANGUAGE COURSE

UNIT 2402

OUTLINE AND STUDY OBJECTIVES

DIALOG: TAKING NOTES IN CLASS

QUESTIONS ON THE DIALOG

READING: HOW TO IMPROVE YOUR LEARNING

SUGGESTIONS FOR TAKING NOTES ON READING OR LECTURES

POINTERS ON IMPROVING READING AND STUDY HABITS

QUESTIONS ON THE READING AND SUGGESTIONS

EXERCISES IN NOTE-TAKING

PROBLEMS FOR DISCUSSION

TAPE 2402A

TAPE 2402B

UNIT 2402

DIALOG

TAKING NOTES IN CLASS

A: You'd better take pencil and paper to class.

B: Why?

A: You need to take notes.

B: Everything the instructor will talk about is in the book.

A: I know that, but will you remember what he emphasizes?

B: Sure, I underline the sentences he repeats, and I also circle a word he wants us to remember.

A: I also do that, but taking notes is also important.

B: I don't see why. I underline or circle the important information in the book.

A: Sometimes the instructor gives explanations which clarify the book material. Quite often you do not completely understand what you read in a book. The explanations the instructor gives must be written down.

B: I can't take notes on all of his explanations.

A: You shouldn't try to do that. You should pick out the main points and write them down the best way you can.

B: I guess so. I've got paper. Can you lend me a pencil?

A: Sure. Another reason why you should take notes is that you have all of the most important information together. You can study better.

B: I am convinced. I'll take notes from now on.

A: You'll make better grades.

QUESTIONS ON THE DIALOG

1. If a student never takes notes, how can he study the night before the examination?
2. If a student only underlines sentences, how can he study the night before an examination?

3. Why does a student who takes complete notes have an easier time studying?
4. Should you take notes when you read the lessons before coming to class? Why?
5. Do you think that writing down what someone says helps you remember it even if you never review the notes?
6. Did you take notes when you went to school?
7. Do you need to write *everything* that the instructor says?
8. What are the different ways of knowing when something that the instructor says is important and must be written down?

READING

HOW TO IMPROVE YOUR LEARNING

Military personnel, like all professional people, must develop the highest degree of skill possible. Modern complex machines are of little value without trained operators. You have been selected for training because of a need for highly trained specialists. Performing on a professional level requires a lot of study, practice, and determination. Hard work and determination will lead to successful accomplishment of your goal.

Soon you will enter training in your technical field. Specialized study is going to require a large amount of reading. So you can expect to burn some midnight oil. You will find that the better you know the classroom material, the easier it will be for you to do practical work.

You will need a plan for learning. Silent reading and passive listening are not good enough for learning language skills. To study effectively, you need to react, to do something, as an aid to learning. We learn best by doing, don't we? An active approach will include taking notes on lectures, improving your notes as soon as possible to be sure that they mean something to you. A plan will also include having a definite goal or aim.

SUGGESTIONS FOR TAKING NOTES ON READING OR LECTURES

1. Be attentive and interested when you read or listen.
2. Put the ideas in your own words in English if possible.
3. Ask yourself: What are the ideas and meanings of the statements?
4. Prepare thoroughly by looking over text or supplementary materials dealing with the subject.
5. Be brief! Jot down ideas using your own abbreviations so you can keep up with the speaker.
6. Be alert! Recognize major points and most important facts and ideas.
7. Organize your notes, showing major ideas or points and subpoints.

You will need a definite goal or aim. Such a goal might be reading and responding to what you have read orally or in writing, asking and answering questions. It might include learning a fixed number of words or expressions each day, writing or rewriting a few paragraphs.

Learning takes place under limited circumstances. You should practice the material in the way in which you will use it later. Study the exercises and practice them in your room in the way they will be used in the classroom and in the laboratory.

You may know the answer to a question or want to say something but not be able to put it in words in class. Try to express your thoughts before going to class. Take a lesson from the man who said, "I talk to see what I think." Talk and write to see what you can say. Don't wait until you get in class or a speaking situation to find out what you can't do. It's a wonderful feeling to be prepared.

POINTERS ON IMPROVING READING AND STUDY HABITS

1. Get in the proper physical and mental setting and avoid distractions.
2. Have a goal and set some clear objectives for yourself.
3. Have a will to learn and a determination to improve.
4. Be attentive and focus the full power of your mind on the material.
5. Look for basic ideas and organization that makes sense to you.
6. In reading silently, select meaningful phrases and pick out the main thoughts. These are usually stated at the beginning or end of the paragraph.
7. Locate key words and phrases and increase your speed and comprehension.
8. Think! Think and maintain a questioning attitude.
9. Be systematic and organize your thoughts and ideas to make a complete picture.
10. Review and practice what you have learned.

QUESTIONS ON THE READING AND SUGGESTIONS

1. What is meant by saying that learning is an active process?
2. What goal or objectives should you have in studying this unit?
3. What points in this lesson should help you improve your study and learning efforts?
4. Why is the physical and mental setting so important in your home study and in the classroom?

5. How do you apply the principle "Learn to do by doing" in learning English?
6. Underline the "key words and phrases" in the reading selection and suggestions on page 19.
7. Let's make an outline of the reading selection on the board, including the main ideas and subpoints.
8. Why is it important to *think* and to *maintain a questioning attitude*?
9. Why is it necessary to take brief notes in listening to lectures?
10. Why and how are review and practice essential in learning?

EXERCISES IN NOTE TAKING

Here is an example of notes on a reading selection. Study the example and be sure you understand it. You will be asked to take notes on similar selections.

There are four basic forms of writing. Narration, one of the forms, is used to tell a story. The story may be true or imagined. Another form is description. Description is used to describe things. We might, for example, use description to describe a picture, a room, or a building. Another form is called exposition. This is a form we use to explain. Much of the material in newspapers, magazines, and textbooks is written to explain. The other form is argument, which is used to convince or to persuade. The salesman may use this form to convince you that his product is the best.

NOTES

1. 4 forms of writing
 - a. narration
 - b. description
 - c. exposition
 - d. argument
2. 4 forms of writing
 - a. use narration — to tell story
 - b. " description — to describe
 - c. " exposition — to explain
 - d. " argument — to persuade

Now listen to the following selection and take notes. Close your books.

There are four basic things you can do to improve your listening habits. First, you can concentrate on what the speaker is saying. That is, you must make a special effort to follow the lecture. Then you should listen carefully for main points. The instructor will usually indicate main points by repeating, or pausing, or by changing his voice. And, of course, you must pay special attention to what he says when he writes on the blackboard. Ask the instructor to repeat a point if you do not understand. He will be pleased that you are interested in what he is saying. Asking questions is an aid to listening.

Let's listen to another reading selection and take notes.

We should also form effective note-taking habits. Passive listening is usually not enough; you must react. You can react by asking questions and by taking notes. You have to listen carefully and find or pick out the main points and the subpoints. Write the main points first and then the subpoints under each main point. Use a simple outline, and make the notes as brief and clear as possible. Use words and phrases rather than long sentences. You may miss some important points unless your notes are brief. After the lecture is over, read your notes and improve the wording and handwriting if they are not clear.

PROBLEMS FOR DISCUSSION

1. Which person do you think will be more successful in a course of study? Explain why.
 - a. John studies very hard at the beginning and then slows down.
 - b. Bill starts slowly at the beginning of a course, and then studies very hard at the end.

2. From which of the following do you learn the most English? Explain why.
 - a. Listening to the instructor
 - b. Reading
 - c. Writing answers to questions
 - d. Answering questions orally
 - e. Discussion
 - f. Studying notes

3. What abilities do you think are necessary to learn English? Try to name as many as you can and explain why.

TAPE 2402A

Listen.

Listen very carefully. This tape is designed to test your listening ability. You will hear very short paragraphs. After each paragraph, you will hear questions. If you do not listen carefully, you will not be able to answer the questions. Answer when you hear **.

Repeat the answer when you hear *. Now you'll hear a short paragraph.

The purpose of this tape is to determine your ability to listen effectively. You can answer the questions if you are listening carefully.

What is the purpose of this tape? **
 to test my ability to listen *
 The purpose of this tape is to test my ability to listen. *

Why can you answer the questions? **
 because I was listening *
 I can answer the questions because I was listening. *

Listen.

You do not need to repeat the answers exactly as you hear them on the tape. Your answer may also have a different structure than the answer you hear after the question. This is all right, because there are many ways you can answer a question.

Must you repeat the answers exactly as you hear them? **
 No. *
 No, I do not need to answer exactly as I hear it. *

Must your answer be the same as the answer on the tape? **
 No. *
 No, it can have a different structure. *

Is there only one way to answer a question? **
 No. *
 No, there are many ways you can answer a question. *

Listen.

There are courses in colleges which teach people how to listen effectively. It has been discovered that a great majority of people do not know how to listen.

What courses are colleges teaching? **
 listening *
 Colleges are teaching how to listen. *

Why are they teaching how to listen? **
 because people do not know how to listen *
 Colleges are teaching listening because people do not know how to listen. *

Listen.

In meetings you have often heard a person repeat something many times. He often says the same thing in different ways. This is done because the speaker realizes that many people do not listen.

What does a speaker often do? **
 He repeats something. *
 A speaker often repeats something. *

Why does a speaker repeat something? **
 because many people do not listen *
 A speaker repeats something because many people do not listen. *

Listen.

People do not listen for many reasons. Some people do not concentrate on what the speaker is saying. Other people do not want to listen to a different viewpoint and other people simply have assumed that they already know the subject of the lecture.

What is one reason that people do not listen? **
 Your answer should be one of the following:
 They do not concentrate. *
 They have a different viewpoint. *
 They assume that they already know the subject of the lecture. *

What is your main problem in listening? **
 Your answer might be one of the following:
 I do not concentrate. *
 I have a different viewpoint. *
 I assume that I already know. *

Listen.

Sometimes people consider a person slightly deaf. This person is always asking people to repeat a question or statement. He is always saying, "What? What did you say?" or "Say that again." This person may have perfect hearing. He may have developed bad listening habits because his friends are willing to repeat everything they tell him.

Why do you often have to repeat something to some people? **
 because they do not listen the first time *
 You need to repeat because they do not listen the first time. *

Does it necessarily mean that a person has ear trouble because he asks you to repeat something? **
 No. *
 No, he may have bad listening habits. *

Why does a person develop bad listening habits? **
 because friends are willing to repeat *
 A person develops bad listening habits because his friends are willing to repeat. *

Listen.

A certain amount of concentration is necessary to listen effectively. One good method to concentrate better is to be interested in what the speaker is saying. Students who are motivated are much better listeners than students who are not interested in the subject.

Which students are better listeners? **
 students who are motivated *
 Students who are motivated are better listeners. *

Which students are not good listeners? **
 students who are not interested *
 Students who are not interested are not good listeners. *

Listen.

If you have been concentrating on the tape paragraphs, you should have answered all the questions when you heard **. The students who cannot answer probably need to concentrate better. It is very necessary to listen closely to the tape.

What does a student need to do if he cannot answer the questions? **
 He needs to listen closely. *
 He needs to concentrate. *
 If a student cannot answer the questions, he needs to concentrate and listen closely. *

If a student has answered all the questions, what has he been doing? **
 He has been concentrating. *
 He has been listening closely. *
 He has been concentrating and listening closely. *

 Listen.

A speaker usually tells you either a number of facts or develops an idea. A listener must listen for these things. Sometimes a group of facts make up an idea or a thought which the speaker wants the listener to learn.

What two things must you listen for?	**
a number of facts or a thought	*
You usually listen for a number of facts or a thought.	*

What does a group of facts make up sometimes?	**
an idea	*
A group of facts make up an idea.	*

 Listen.

For example, a speaker may tell you about many car accidents. He may tell you the reasons that the accidents happened. However, the speaker's main idea may be simply to tell you to drive carefully.

If a man tells you of the dangers of smoking, what does he probably want you to do?	**
stop smoking	*
He wants me to stop smoking.	*

If a man tells you all the harmful effects of drinking, what does he probably want you to do?	**
quit drinking	*
He wants me to quit drinking.	*

John told Bill about the importance of being on time. What did John want Bill to do?	**
to be on time	*
not to be late	*
John wanted Bill to be on time.	*

 Listen.

Too often a listener is listening only for facts. It is important to remember that a speaker is developing an idea. You must listen for the facts and for any main idea that the speaker is developing.

What must you listen for in a lecture?	**
for facts and main ideas	*
You must listen for facts and the main idea.	*

How does a speaker develop a main idea?	**
by using facts	*
A speaker develops an idea by using facts.	*

Listen.

One type of listener is a listener with a closed mind. This person listens only to the facts he wants to hear. He ignores the facts that do not agree with his ideas or that he is not interested in.

What is a listener with a closed mind?	**
a person who does not listen to all the facts	*
A person with a closed mind is a person who does not listen to all the facts.	*

What happens to a person who only hears half of the facts?	**
he does not understand	*
A person who only hears half of the facts does not understand.	*

Listen.

Be very careful when you listen to a lecture. Often you already have ideas on a subject. Do not let your own ideas keep you from listening to a different viewpoint.

What keeps you from listening to a different viewpoint?	**
your own ideas	*
Your own ideas keep you from listening to a different viewpoint.	*

Listen.

During the playback, take notes on all the important facts about listening. Write them in paragraph form and include your own opinions on the subject. Turn this paper in to your instructor.

TAPE 2402B

Listen.

We have been talking about ways to improve your learning. We said you should listen carefully and take notes. Knowing how to improve your learning is important, but the most important thing is to apply this knowledge. We can give you a lot of planned practice. However, you need to practice on your own. You need to form a habit of listening and taking notes.

Were you listening carefully to this? Let's see if you can answer some questions on what the voice said.

What do you need to form?	**
a habit	*
I need to form a habit.	*

What habit do you need to form?	**
a habit of listening and taking notes	*
I need to form a habit of listening and taking notes.	*

Which is better, planned practice or practice on your own?	**
practice on my own	*
Practice on my own is better.	*

The most important thing is to apply knowledge, isn't it?	**
Yes, it is.	*
That is the most important thing.	*

Listen.

You will listen to some very short paragraphs. Take a pencil and paper and write a short sentence about the main idea of the paragraph. You will now hear a sample paragraph.

Perhaps nothing in this world can be accomplished without the benefit of science. Science affects everything. Consider what scientific discoveries have done for transportation, communications and living habits.

This is the end of this short paragraph. A student could write something like this:

This paragraph is about the importance of science. Science affects many things.

Here is another sample paragraph:

One way science can be described is that it is a method of thinking. A scientist is not very interested in opinions or beliefs. He deals only in facts. He accepts only what has been proven to be as absolutely true as possible.

This is the end of the short paragraph. A student could have written something like this:

Science is a way of thinking.
Scientists work only with facts.

Write a #1 on your paper. At the end of a paragraph you'll hear, write one or two sentences on the main theme of the paragraph.

Now listen to the paragraph.

Early thinkers thought that problems could be solved by reasoning. In other words, if there was a problem, early thinkers would read all the opinions of great thinkers and come to a conclusion. If a scientist wants to know why birds can fly, he goes and watches birds. He makes experiments. After many experiments, he comes to some conclusions. This is the difference between two kinds of thinking.

Now write the notes on #1 on your paper.

Here is paragraph #2. Listen to it and take notes.

Experimentation is a scientific way of solving problems. For centuries people had reasoned that a heavy rock would fall faster than a light rock. Finally, a man went up on a tower and dropped a heavy rock and a light rock at the same time. After many experiments he discovered that both objects fall at exactly the same speed. He was one of our first scientists.

Now write your notes on this paragraph.

Listen again and take notes on another paragraph.

When you see a complex machine like a radio, airplane, or car, you may wonder who could have ever invented such an invention. Actually all complex machines are based on previous scientific discoveries and inventions. You would need a book to write down all the inventions and discoveries which have been used to make a final product such as a car.

Now write your notes.

Listen.

You have heard two sample paragraphs plus three paragraphs. You should have some notes on your paper. See if you can answer in complete sentences the following questions. Answer ** when you hear **.

How do scientific discoveries affect everything?	**
How does science affect transportation?	**
How does science affect your way of life?	**
Is a scientist interested in opinions or beliefs?	**
How does a scientist come to a conclusion?	**
Which rock falls faster, one that weighs 10 pounds or one that weighs 5 pounds?	**
Who actually invented our modern car?	**

DIALOG

Repeat when you hear *

A: What does scientific proof mean?	*
B: It means that experimentation has been done.	*
A: I don't quite follow your reasoning.	*
B: Well, we can use a contest between two small boys to explain scientific proof	*
A: What do you mean?	*
B: What do two boys do if they want to decide who runs faster?	*
A: They race each other.	*
B: What do they do if they want to decide who can jump the highest?	*
A: They have a jumping contest, I guess.	*
B: All right. That is scientific proof.	*
If you want to know something you experiment and find out.	*
A: I see, and the results of those experiments are scientific proof that one boy can run faster or jump higher than the other.	*
B: That's right.	*

AMERICAN LANGUAGE COURSE

UNIT 2403

OUTLINE AND STUDY OBJECTIVES

READING: HANDLING A MACHINE

PRONUNCIATION PRACTICE

TERMS OF DEGREE

NOTE-TAKING EXERCISE

CONVERSATION PRACTICE

DICTATION

PROVERBS AND WISE SAYINGS

TAPE 2403A

TAPE 2403B

UNIT 2403

READING

HANDLING A MACHINE

The man who learns to *handle* (operate) a machine properly must start as a beginner, as a student, and progress gradually into an *efficient* (capable) operator.

In the early stages, the student will likely be *tense* (tight) and nervous. Naturally he will make mistakes. His movements will be awkward and sometimes unskilled. The controls are new to him. He has not had time or opportunity to develop the "feel" of the controls. However, after much practice, his feel develops and you will *observe* (notice) that he handles the machine with skill and ease.

In order to help a student learn to handle a machine *efficiently* (capably) and in reasonable time, the instructor explains many things to him. He *demonstrates to* (shows) the student how to perform the necessary operations. Also, the student is given written materials which will help him.

Both the instructor and the written matter *frequently* (often) use certain words or terms which give advice and caution to the student. These directions are often stated in the affirmative and sometimes in the negative.

There are some rules which *apply to* (are connected with) the handling of most complex machines. Many times the man who has learned to operate one smoothly can learn quickly to handle another one. Let's look at two types of drivers of an automobile. One of the men is a skilled operator, the other one is not.

Mr. Adams is *relaxed* (at ease) at the wheel. He controls his car smoothly and with ease. He starts the car moving slowly, and gradually accelerates to the desired speed. While driving in traffic, he selects the proper lane and usually stays in it. If it becomes necessary for him to stop, he begins the stop soon enough that he accomplishes it by a gentle pressure on the brakes. On the highway he *maintains* (keeps) a steady speed and gets there on time. He is a safe driver, a good operator.

Let's now look at Mr. Brown and his driving habits. Unlike Mr. Adams, Mr. Brown is not relaxed. He appears *tense*, or as we sometimes say — "tight." He starts the car with a *sudden*, (abrupt) *jerking* (quickly starting and stopping) movement. In traffic, he constantly cuts back and forth from lane to lane. He drives too close to the car ahead of him, and then it often becomes necessary to "slam" on the brakes. In making a turn, he often does it in a very abrupt manner. On the highway, he is a danger to life and property. He exceeds the speed limit. He shifts the car from one side of the road to the other in an *erratic* (irregular) manner. He is an unsafe driver, a poor operator.

PRONUNCIATION PRACTICE

reLAXED
SMOOTHly
with ease
SLOWly
GRADually
GENTle
STEADy

tense
SUDden
JERKing
back and forth
slam
abRUPT
erRATic

Repeat these sentences after the instructor. Books closed.

1. Don't "fight the controls."
2. Make *smooth* corrections.
3. Rough or *erratic* use of the controls will cause the machine to react accordingly.
4. The first pilot made a *gentle* turn.
5. The second pilot made a *medium* turn.
6. The third pilot made a *sharp* turn.
7. The stick is held *lightly* with the fingers.
8. Do not *jerk* the wrench. Apply *constant* pressure instead.
9. *Gradually* increase the pressure on the brakes.
10. A good operator performs his work with skill and *ease*.
11. There was a *sudden* increase in pressure.
12. There was a pressure *surge*.

TERMS OF DEGREE

There are many terms used to describe movement of persons and things. Notice the words used to express degree which is somewhere between the two extremes. Fill in the blanks with appropriate words.

Example:

slowly (average, moderate, normal) *fast*

The driver drove *slowly* into the intersection.

The driver drove into the intersection too *fast*.

The driver drove *at average speed* into the intersection.

1. He made an *abrupt* turn to the right.
2. He made a *slow* turn to the right.
3. He _____ *moderate* _____.
4. The driver applied *too little* pressure on the brakes.
5. The driver _____ *too much* _____.
6. The driver _____ *moderate* _____.
7. The maximum number of students per class is ten.
8. The minimum number _____ is four.
9. The (*average, normal*) _____ is seven.
10. The *maximum* take off load is 69,000 lb.
11. The *minimum* fuel need is 5,500 gallons.
12. Some aircraft have a *long range*.
13. Some aircraft _____ short range.
14. Some are of intermediate range.
15. The crew removed the engine in *minimum* time.
16. Another crew used *excessive* time to remove the engine.
17. The last crew removed the engine in *normal* time.
18. The mechanic *slowly* accelerated the engine.
19. The mechanic *abruptly* _____.
20. The mechanic *gradually* _____.

NOTE-TAKING EXERCISE

The instructor reads the following or similar description. Books closed. Students take notes. Students should give particular attention to such items as: *size* (length, width, depth, volume, etc.), *distances* (miles, feet, etc.), *speed* and *rate*, and any specific directions given which warn or caution the student.

DESCRIPTION OF A PRIVATE AIRCRAFT

Beech Aircraft Corporation Model 65 Queen Air

Country of Origin: U.S.A.

Type: Six-seat utility transport

Power Plants: Two six-cylinder horizontally opposed, air-cooled engines.

Performance: Maximum speed 239 mph. Cruising speed 214 mph at 15,000 feet.
Absolute ceiling 28,000 feet. Maximum range 1,500 miles.
Initial climb rate, 1,300 feet per minute.

Dimensions: Wing span 45 feet 10½ inches, length 33 feet 4 inches.
Height at rest 14 feet 2 inches; wing area 277 square feet.

CONVERSATION PRACTICE

Instructor reads aloud or paraphrases one or more of the following paragraphs, repeating if necessary. Students listen with books closed. Students answer questions formed by classmates.

1. The student has to learn to handle a machine efficiently. In order to do so, he has to read study guides. And, of course, he has an instructor who is always ready to explain difficult things for him.

- a. How well does a student have to learn to handle machines?
- b. Why does he have to read study guides?
- c. Will the student have an instructor?
- d. What will the instructor do to help the student?

2. The driver was standing by his car. A city policeman was writing him a ticket for a traffic violation. This occurred about 2 p.m. on Friday just one block from an elementary school. Though the "School Zone" sign was easy to see, the man had driven his car at 35 miles per hour in a 20-mile zone. He was fined \$15.

- a. Where was the driver standing?
- b. Who was writing the ticket?
- c. How much was the fine?
- d. Where did this occur?
- e. What time was it?
- f. What was the maximum speed limit in the school zone?
- g. At what rate of speed was the man driving?

3. It was a very cold morning. The temperature was below freezing. The first thing the mechanic did was remove the ice from the windshield of the car. He knew that it was not safe to drive unless he could see properly. Then he got in the car and started the engine. Since the engine and oil were cold, the engine was not accelerated. After about five minutes, the man then drove off to work at the base.

- a. What did the man do first?
- b. What did the man do second?
- c. What did the man do last?
- d. What was the temperature?
- e. How long did the engine warm up?

Students reread the paragraphs at normal speed for fluency practice.

DICTION -- Books closed!

Any gas can be changed into a liquid. Air itself can be transformed into a liquid. It will look blue and it will be so cold that even the mercury in a thermometer will freeze solid if you hold it in the liquid.

Why do we reduce oxygen to its liquid form? One reason is that oxygen takes up much less space as a liquid than as a gas. We can store and transport it in a bottle and save space. Then, when we need oxygen, we reduce the pressure by opening the bottle. When the oxygen escapes, it becomes warmer and reverts to its gaseous state.

Knowledge of these characteristics of gases and liquids under pressure and at different temperatures is essential to the scientist. He applies this knowledge in many ways and makes it useful to mankind.

PROVERBS AND WISE SAYINGS

Students read and discuss literal and/or figurative meanings of the following.

1. A stitch in time saves nine.
2. It never rains, but it pours.
3. You can lead a horse to water, but you can't make it drink.
4. He has too many irons in the fire.

TAPE 2403A

Listen.

In learning to operate a machine, you must start as a beginner and progress gradually. At first, you will likely be tense and nervous. Naturally, you will make mistakes. You will probably make sudden and rough movements because the controls are new to you. However, after a lot of practice you will get the feel of the controls and make easy skillful movements.

Listen.

Let's practice the pronunciation of some key expressions.

progress gradually *

progress gradually *

You must progress gradually. *

tense and nervous *

tense and nervous *

You will likely be tense and nervous. *

sudden and rough movements *

sudden and rough movements *

You will probably make sudden and rough movements. *

easy, skillful movements *

easy, skillful movements *

Finally, you will make easy, skillful movements. *

Listen.

Listen to the following reading and be prepared to answer some questions. Answer the question when you hear **, and repeat the answer when you hear *. Do not repeat the questions. I say again, do not repeat the questions.

Mr. Adams is relaxed at the wheel of the car. He controls his car smoothly and easily. He starts slowly, and gradually accelerates to the desired speed. While driving in traffic, he selects the proper lane and usually stays in it. When he has to stop, he begins the stop soon enough to accomplish it by gentle pressure on the brakes. He maintains a steady speed on the highway and gets there on time. He is a safe driver, a good operator.

Give short and complete answers to the questions.

Who is the operator of the car? **

Mr. Adams *

Mr. Adams is the operator of the car. *

Is he a safe or a dangerous driver?	**
a safe driver	*
He is a safe driver.	*
How does he accomplish a stop?	**
by gentle pressure on the brakes	*
He accomplishes a stop by gentle pressure on the brakes.	*
Does he select the wrong or the proper lane?	**
the proper lane	*
He selects the proper lane.	*
Is Mr. Adams tense and nervous?	**
No, he isn't.	*
He is relaxed at the wheel.	*
How does he accelerate?	**
gradually	*
He accelerates gradually.	*

Listen.

Listen to the speaker and take notes. You will need paper and pencil now. Ask your instructor to review your notes for evaluation and suggested improvement if necessary.

Let's talk about Mr. Brown and his driving habits. Unlike Mr. Adams, Mr. Brown is not relaxed, instead he appears tense. Because he is uneasy, he starts the car with a sudden, jerking movement. In traffic, he constantly cuts back and forth from lane to lane. He drives too close to the car ahead of him and often has to slam on the brakes. In making a turn, he frequently does it in an abrupt manner. He exceeds the speed limit and is a danger to life and property on the highway. He is an unsafe driver, a poor operator.

Listen and repeat.

Mr. Brown appears tense.	*
In other words, he seems tense.	*
Mr. Adams is relaxed at the wheel.	*
That is, he appears at ease.	*
Mr. Brown constantly cuts back and forth from lane to lane.	*
He continually shifts from lane to lane.	*
He stops the car suddenly.	*
That is, he slams on the brakes.	*
He should stop the car gradually.	*
Mr. Adams stops by applying gentle pressure on the brakes.	*
Mr. Adams is a safe driver, a good operator.	*
Mr. Brown is an unsafe driver, a poor operator.	*

abrupt turns	*	abrupt turns	*
sudden turns	*	sudden turns	*
Unskilled operators tend to make abrupt turns.			*
This means they tend to make sudden turns.			*
slow turns	*	slow turns	*
moderate turns	*	moderate turns	*
Skilled operators make slow or moderate turns.			*
A skilled operator turns neither too abruptly nor too slowly.			*
He makes moderate turns.			*

Listen.

You will need pencil and paper for a short dictation exercise. First you will write the final part of a sentence. Then you will write the complete sentence. You may correct your exercises during the playback.

Listen and write.

a long range
Some aircraft have a long-range capability.
a short range
Some aircraft have a short-range capability.
of intermediate range
Some are of intermediate range.

in minimum time
They removed the engine in minimum time.
in normal time
They removed the engine in normal time.

Listen and repeat.

Look at that driver.
He drives like a beginner.
See how he suddenly changes speed.
He's going to have an accident.
He'll get hit or hit someone driving like that.
Hope he has good brakes.
He'd better have his seat belt fastened.
He's getting too close to the car in front of him.
Suppose the other car had to make a sudden stop.
Boy! He is running a red light.
He got by with it that time.
But what a close call.

*
*
*
*
*
*
*
*
*
*
*

TAPE 2403B

Listen.

Let's practice the use of some terms used to describe movement of things. Listen to the following.

In handling a machine, you don't fight the controls. Instead of making sudden, jerking movements, you should make gradual, smooth movements. Rough or erratic use of the controls will cause the machine to react accordingly. Remember! Take it easy. Easy does it.

Listen and repeat.

Don't fight the controls.			*
Take it easy and the machine will react smoothly.			*
Remember! Always make smooth corrections.			*
Sudden, jerky movements will cause similar reactions.			*
Make gradual, smooth movements instead of sudden, jerky movements.			*
Take it easy. Easy does it.			*

Listen.

Let's practice some expressions with some useful terms of degree.

Listen and repeat.

abrupt	*	abrupt	*
an abrupt turn to the left			*
an abrupt turn to the left			*
He made an abrupt turn to the left.			*
He made an abrupt turn to the left.			*
abruptly	*	abruptly	*
abruptly to the left			*
abruptly to the left			*
He turned abruptly to the left.			*
He turned abruptly to the left.			*
slow	*	slow	*
a slow turn to the right			*
a slow turn to the right			*
Then the driver made a slow turn to the right.			*
Then the driver made a slow turn to the right.			*

slowly	*	slowly	*
slowly to the left			*
slowly to the left			*
That's fine. Now turn slowly to the left.			*
That's fine. Now turn slowly to the left.			*
You made a nice, slow turn to the right.			*
Now turn slowly to the left.			*

moderate	*	moderate	*
a moderate turn to the right			*
a moderate turn to the right			*
Practice making a moderate turn to the right.			*
Practice making a moderate turn to the right.			*

moderately fast	*	moderately fast	*
a moderately fast turn			*
a moderately fast turn			*
Did you say he made a very fast turn?			*
No, I said he made a moderately fast turn.			*
No, I said he made a moderately fast turn.			*

He turned moderately fast.			*
He turned moderately fast.			*

Let's practice the terms maximum, minimum, and average.

the maximum	*	the maximum	*
the maximum number of students in my class			*
the maximum number of students in my class			*
Ten was the maximum number of students in my class.			*
Ten was the maximum number of students in my class.			*

the minimum	*	the minimum	*
the minimum number of students in my class			*
the minimum number of students in my class			*
Four was the minimum number of students in my class.			*
Four was the minimum number of students in my class.			*

the average	*	the average	*
the average number of students in my class			*
the average number of students in my class			*
Seven was the average number of students in my class.			*
Seven was the average number of students in my class.			*

Listen.

Remember the following sentences. Answer when you hear **.

The average number of students in my class was seven. *

The minimum number of students in my class was four. *

The maximum number of students in my class was ten. *

What was the maximum number of students in your class? **

The maximum number was ten. *

What was the minimum number of students? **

The minimum number of students was four. *

What was the average number of students in your class? **

The average number was seven. *

Listen.

Some aircraft can fly long distances without refueling. They have ranges of several hundred miles. Others can fly considerable distances, but have to stop for refueling. These aircraft are of intermediate range. Then some are capable of flying only short distances without being refueled. Such aircraft are of short range.

Listen and repeat.

Some aircraft fly long distances without refueling. *

They have a long range. *

Other aircraft cannot fly as far as the long range ones. *

They have a short range. *

And some aircraft have to make frequent stops to refuel. *

These are of intermediate range. *

Let's listen to a short intonation exercise and then practice the expressions.

(1st speaker) The captain flew the old plane.

(2nd speaker) I'm sorry, I didn't understand what you said.

(1st speaker) I said, the captain flew the old plane.

(2nd speaker) He flew what?

(1st speaker) He flew the old plane.

(2nd speaker) Did you say he flew the old plane or he knew the old plane?

(1st speaker) I said, he flew the old plane.

(2nd speaker) Who flew the old plane? The captain flew the old plane.

Listen and answer.

What did the captain fly? **

He flew the old plane.

Did you say he flew or knew the old plane? **

I said he flew the old plane.

Who flew the old plane? **

The captain flew the old plane.

AMERICAN LANGUAGE COURSE

UNIT 2404

OUTLINE AND STUDY OBJECTIVES

READING: THE AIR AROUND US

QUESTIONS ON THE READING

PROVERBS AND WISE SAYINGS

TAPE 2404A

TAPE 2404B

UNIT 2404

READING

THE AIR AROUND US

The instructor will read or rephrase the following paragraphs. Books closed. The student may take notes or simply listen to the instructor as he reads or speaks. The student should be prepared to answer questions on the material. The instructor may use questions other than those appearing in the exercise.

Knowledge of the behavior of the ocean was necessary for safe traveling on its surface. Man had to learn the effects of ocean currents. He needed to know the behavior of the ocean during periods of storm and calm. We have gone forward from traveling on an ocean of water to flying through an ocean of air. This ocean of air is called the atmosphere.

QUESTIONS ON THE READING

1. What did man have to learn for safe traveling on the ocean?
2. Who had to learn the effects of ocean currents?
3. Why did he have to learn this?
4. If we travel on an "ocean of water," what do we fly through?
5. What is another name for this ocean of air?

The atmosphere is actually part of the earth. It rotates with the earth in space and can be considered a gaseous outer cover of the earth. The size relationship between the earth and the earth's atmosphere is comparable to a baseball and its cover. In addition to rotating with the earth, the atmosphere is in continuous motion, separate from its motion of rotation with the earth. This continuous motion of the atmosphere is caused by temperature variations; hot over the equator, cold over the poles.

1. What is part of the earth?
2. What rotates with the earth?
3. Is the atmosphere a gaseous outer cover of the earth?
4. What is the atmosphere compared to?
5. The earth and its atmosphere is comparable to a baseball and its cover. Can you think of other objects that could be used for a comparison?
6. The atmosphere rotates with the earth. Does it have another motion?

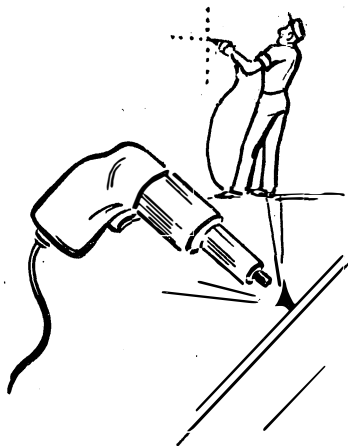
7. What causes this motion?
8. Discuss temperature regions on the earth.

Air, an invisible gas, can be changed to a liquid. It becomes a liquid when it is sufficiently compressed, squeezed together, and cooled. In liquid form, you can pour it from one container (a glass, for example) into another.

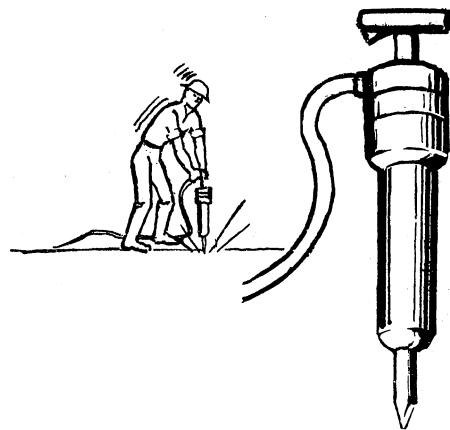
1. Is the air a gas or a liquid?
2. What can air be changed to?
3. How can we change air from a gas to a liquid?
4. What are the two forms of air?

Air under pressure is used in automobile and truck tires to absorb shock. It can be used in devices to drive rivets, tighten and loosen nuts, and break holes in concrete. *Moving air* (air in motion) drives windmills and boats on lakes and oceans. On the quietest days, air is strong enough to support an airplane in flight. Moving as a *tornado* (a whirling wind), it can wreck buildings.

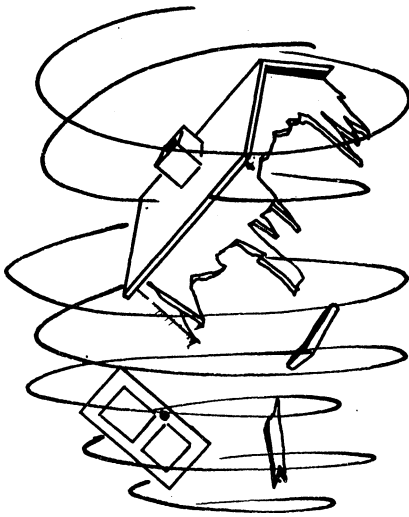
1. Why do we put air in automobile and truck tires?
2. What do we use air under pressure for?
3. What are some other uses of compressed air?
4. Can a tire pump be used to compress air?
5. Name some devices that use the energy of air in motion to do work.



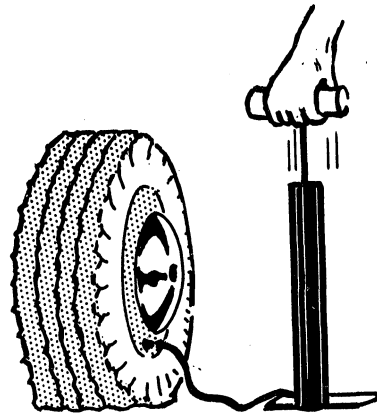
RIVET HAMMER



PNEUMATIC HAMMER



WHIRLWIND



TIRE PUMP

Like other gases, air flows and takes the shape of its container just as liquids do. Air is a mixture of about 80% nitrogen and 20% oxygen. Oxygen, you will remember, is an element man must have in order to live. Small amounts of other gases are present in the air. Water vapor and dust particles are also present and are found as high as 30,000 and 40,000 feet.

1. What is the shape of the air in a square box?
2. What shape does coffee take in a coffee cup?
3. What does air mainly consist of?
4. Does air consist of oxygen and nitrogen only?
5. Is water vapor in the air a gas or a liquid?
6. What element in the air must man have in order to survive?
7. Are dust particles found only in the lower atmosphere?
8. Do you change the shape of the air inside a toy balloon if you squeeze or bend the balloon?

The atmosphere extends upward about 500 miles. Particles of air at sea level are close together. In other words, the air is *dense* (has weight). The higher we go, the farther apart the particles are and the air is lighter. Normally you have no difficulty breathing and you do not feel the effects of atmospheric pressure. On a high mountain, you would have difficulty breathing. In a high altitude aircraft, air has such little density that you need a pressurized cabin or a pressure suit in order to survive.

1. How far does the atmosphere extend upward?
2. Does air have the same density throughout the atmosphere?

3. Where would you experience difficulty breathing?
4. Where would your body feel the effects of low air pressure?
5. Where is air least dense?
6. Where is air more dense?
7. What would you need in order to survive at a very high altitude?

A fish under water is under pressure of the weight of water and air above. In a similar manner, man is under pressure of the air layers above him. The air pressure at the surface of earth is 14.7 pounds *per square inch* (psi).

1. Does pressure increase or decrease when you go deeper into the water?
2. What does psi stand for?
3. Can we compare a man and a fish as far as pressure is concerned?

Here are some summary statements about the composition and behavior of the atmosphere.

Air is composed primarily of oxygen and nitrogen.

It flows and changes shape under pressure.

Under pressure, air is used to do work.

Pressure exerted by air is the same in all directions.

The closer air is to the earth, the greater its density.

When you speak of air as the entire air layer, you call it the atmosphere.

VACUUM

The air in the atmosphere occupies space. Although its 14.7 psi cannot consciously be felt, we do feel a force when the wind is blowing. Deprive a man of his atmosphere and he dies like a fish lifted from the water. For all practical purposes, we can say that there is nothing but empty space above the atmosphere. An empty space without air is called a vacuum. A man above the atmosphere would die violently from his own internal pressures. Man cannot exist in a vacuum.

You can create a partial vacuum by doing many simple experiments. Boys sometimes put a glass over their mouths, making it an airtight container. They then inhale, emptying part of the air out of the glass. If you have ever done this, you have undoubtedly felt the extreme lack of air pressure around your lips. Can you imagine what the effect must be on an unprotected body 50 miles above the surface of the earth?

In a straw that you use for drinking and in the pump, you create a partial vacuum.

1. Does atmosphere occupy space?
2. Does the atmosphere exert pressure on our bodies?
3. When do we feel air pressure?
4. What is above the atmosphere?
5. Is there anything in a vacuum?
6. Can man exist in a vacuum?
7. How can you create a partial vacuum?



VACUUM CLEANER

Many machines use a partial vacuum for operational purposes. A mechanic may talk about a pressure differential. He means that one part of a system has less pressure than another part. In essence, the part that has less pressure has a partial vacuum in relation to the part with pressure. If a pressure differential exists in two connected chambers, the air will try to move to the chamber that has the partial vacuum. The carburetor of a car works on this principle. Because of the pressure differential, air is sucked into the chamber where it mixes with the fuel.

1. How does air react when a pressure differential occurs?
2. What happens in a carburetor?
3. Can you think of other machines that use a partial vacuum or suction for their operation?

PROVERBS AND WISE SAYINGS

Students read and discuss literal and/or figurative meanings of the following.

1. Constant dripping wears away stone.
2. All that glitters is not gold.
3. Experience is the best teacher.
4. Practice makes perfect.

TAPE 2404A

Listen.

Air is an invisible gas. It can be changed to a liquid. When it is sufficiently compressed and cooled, air changes to a liquid. In liquid form, you can pour air from one container into another. Liquid air has about the same density as water.

Listen and repeat.

invisible gas	*	invisible gas	*
Air is an invisible gas.			*
to a liquid	*	to a liquid	*
It can be changed to a liquid.			*
when it is sufficiently compressed and cooled			*
when it is sufficiently compressed and cooled			*
Air changes to a liquid when it is sufficiently compressed and cooled.			*
about the same density as water			*
about the same density as water			*
Liquid air has about the same density as water.			*

Listen.

You will hear some statements followed by questions. Do not repeat the sentences after the speaker, but answer the questions when you hear **. Give short and complete answers.

Air is an invisible gas. It can be changed to a liquid.	
What is air?	**
an invisible gas	*
Air is an invisible gas.	*
What can it be changed to?	**
to a liquid	*
It can be changed to a liquid.	*
Air changes to a liquid when it is sufficiently compressed and cooled.	
Liquid air has about the same density as water.	
When does air change to a liquid?	**
when it is sufficiently compressed and cooled	*
Air changes to a liquid when it is sufficiently compressed and cooled.	*
What is the density of liquid air?	**
about the same as water	*
The density of liquid air is about the same as water.	*

 Listen.

Air under pressure is powerful enough to cushion truck tires. It is, in other words, used to form a cushion for truck tires because it is capable of supporting several thousand pounds. Air under pressure is also used in devices to drive rivets, tighten and loosen nuts, and drill holes in concrete. A device that is used to compress air is called an air compressor.

Listen and repeat when you hear *. Answer the questions when you hear **. Do not repeat the questions but answer them.

to compress air	*	to compress air	*
an air compressor	*	an air compressor	*
An air compressor is used to compress air.			*

What is an air compressor used for?	**
to compress air	*
An air compressor is used to compress air.	*

What is used to compress air?	**
an air compressor	*

to drive rivets	*	to drive rivets	*
air under pressure	*	air under pressure	*
Air under pressure can drive rivets.			*

What is air under pressure used for?	**
to drive rivets	*
Air under pressure is used to drive rivets.	*

to tighten and loosen nuts	*	to tighten and loosen nuts	*
it is also used	*	it is also used	*
It is also used to tighten and loosen nuts.			

What else is air under pressure used for?	**
to tighten and loosen nuts	*
It is also used to tighten and loosen nuts.	*

What is capable of tightening and loosening nuts?	**
air under pressure	*
Air under pressure is capable of tightening and loosening nuts.	*

for truck tires	*	for truck tires	*
air forms a cushion	*	air forms a cushion	*
Air forms a cushion for truck tires.			*

What does air form?	**
a cushion	*
Air forms a cushion for truck tires.	*

Under pressure, air can support several thousand pounds. *

In liquid form, you can pour it from one container into another. *

Moving as a tornado, air can wreck buildings. *

It is strong enough to support an airplane in flight. *

We put air in our tires to form a cushion. *

We ride on a soft flexible cushion of air. *

We cannot see air. *

In other words, it is invisible. *

Air can be compressed. *

That is, it can be squeezed together. *

Liquid air is dense. *

This means the parts are crowded together. *

A cushion is made of soft elastic materials. *

It is used to absorb shock. *

A rivet is a pin or bolt of metal. *

It is used to unite pieces of metal. *

To rivet means to fasten or unite with rivets. *

Listen.

Let's practice the pronunciation of some key words and phrases.

Listen and repeat.

sufficient	*	sufficient	*
sufficiently	*	sufficiently	*
sufficiently compressed	*	sufficiently compressed	*
container	*	container	*
a metal container	*	a metal container	*
a glass container	*	a glass container	*
visible	*	visible	*
invisible	*	invisible	*
visibility	*	visibility	*
pressure	*	pressure	*
air under pressure	*	air under pressure	*

TAPE 2404B

Let's learn some expressions relating to the earth's atmosphere.

1. the highest layer * the highest layer *
- the highest layer of air * the highest layer of air *
- The highest layer of air above the earth's surface is the ionosphere. *
- Is the ionosphere the highest or the lowest layer of air above the earth's surface? **
- the highest layer *
- The ionosphere is the highest layer of air above the earth's surface. *

2. nearest the surface * nearest the surface *
- nearest the surface of the earth *
- The troposphere is the layer of the atmosphere that rests nearest the surface of the earth. *
- Is the troposphere the layer of the atmosphere that rests the nearest or the farthest from the surface of the earth? **
- the nearest *
- The troposphere is the layer of the atmosphere that rests nearest the surface of the earth. *

3. thicker than * thicker than *
- thicker above the equator * thicker above the equator *
- The troposphere is thicker above the equator than it is above the north or south poles. *
- Is the troposphere thicker or thinner above the equator than it is above the north or south poles? **
- The troposphere is thicker above the equator than it is above the north or south poles. *

4. greater in the summer * greater in the summer *
- less in the winter * less in the winter *
- The height of the troposphere is greater in the summer and less in the winter in the temperate zones. *
- Is the height of the troposphere greater or less in the summer in the temperate zones? **
- greater in the summer *
- The height of the troposphere is greater in the summer in the temperate zones. *

5. the upper stratosphere * the upper stratosphere *
- The upper stratosphere is characterized by an increase in temperature with altitude. *
- Is the upper or lower stratosphere characterized by an increase in temperature with altitude? **
- the upper stratosphere *
- The upper stratosphere is characterized by an increase in temperature with altitude. *

6. coldest * coldest *
- coldest temperatures * coldest temperatures *
- The coldest temperatures in the troposphere occur in polar regions. *
- Do the coldest or hottest temperatures in the troposphere occur in polar regions? **
- the coldest temperatures *
- The coldest temperatures in the troposphere occur in polar regions. *

7. faster than * faster than *
 higher than * higher than *
 Jets fly faster and higher than conventional aircraft. *
 Do jets fly slower and lower or faster and higher than conventional aircraft? **
 faster and higher *
 Jets fly faster and higher than conventional aircraft. *
8. slower than * *
 lower than * *
 Helicopters fly slower and lower than conventional aircraft. *
 Do helicopters fly slower and lower or faster and higher than conventional aircraft? **
 slower and lower *
 Helicopters fly slower and lower than conventional aircraft. *
9. more interesting * more interesting *
 Flying jets is more interesting than flying conventional aircraft. *
 Is flying jets less interesting than or more interesting than flying conventional aircraft? **
 more interesting *
 Flying jets is more interesting than flying conventional aircraft. *
10. the least * the least *
 the least experienced * the least experienced *
 the most * the most *
 the most experienced * the most experienced *
 Capt. Pryor is the least experienced officer, and Col. Bodine is the most experienced officer. *
 Is Capt Pryor the least or the most experienced officer? **
 the least experienced *
 Capt. Pryor is the least experienced officer. *
 Is Col. Bodine the most or the least experienced officer? **
 the most experienced *
 Col. Bodine is the most experienced officer. *
11. bigger and bigger * bigger and bigger *
 closer and closer * closer and closer *
 As the boat comes closer and closer to the shore, the waves become bigger and bigger. *
 What happens as the boat comes closer and closer to the shore? **
 The waves become bigger and bigger. *
 As the boat comes closer and closer to the shore, the waves become bigger and bigger. *
12. same as * same as *
 the same density as * the same density as *
 The density of liquid air is about the same as the density of water. *
 Is the density of liquid air different from or the same as water? **
 the same as *
 The density of liquid air is about the same as the density of water. *
13. up and down * up and down *
 back and forth * back and forth *
 Insects were moving up and down and back and forth on the window. *
 How were the insects moving on the window? **
 up and down and back and forth *
 Insects were moving up and down and back and forth on the window. *

14. strong * strong *
- strong enough * strong enough *
- Air is strong enough to support an airplane in flight. *
- Is the air strong enough to support an airplane? **
- Yes, it is. *
- Air is strong enough to support an airplane in flight. *
15. upward * upward *
- extends upward * extends upward *
- The atmosphere extends upward about 500 miles. *
- How high does the atmosphere extend? **
- The atmosphere extends upward about 500 miles. *
16. higher * higher *
- the higher we go * the higher we go *
- farther * farther *
- the farther apart * the farther apart *
- The higher we go in the atmosphere, the farther apart the particles are from each other. *
- Are the particles farther apart or closer together as we go higher and higher? **
- farther apart *
- The particles are farther apart from each other the higher we go in the atmosphere. *
17. closer * closer *
- the closer air is * the closer air is *
- greater * greater *
- The closer air is to the earth, the greater is its density. *
- Is density greater or less when air is closer to the earth? **
- greater *
- Density is greater the closer air is to the earth. *
18. rapidly * rapidly *
- more rapidly * more rapidly *
- more rapidly than * more rapidly than *
- much more rapidly than * much more rapidly than *
- Liquid air will cause a fire to burn much more rapidly than normal. *
- Will liquid air cause fire to burn a little less rapidly or much more rapidly than normal? **
- more rapidly * more rapidly *
- much more rapidly * much more rapidly *
- much more rapidly than * much more rapidly than *
- Liquid air will cause a fire to burn much more rapidly than normal. *
19. more dense * more dense *
- less dense * less dense *
- near * near *
- near the surface * near the surface *
- higher * higher *
- Air is more dense near the surface of the earth, and is less dense the higher we go. *
- Is air less or more dense near the surface of the earth? **
- Air is more dense near the surface of the earth. *
- Is air more or less dense the higher we go? **
- less dense *
- Air is less dense the higher we go. *

AMERICAN LANGUAGE COURSE

UNIT 2405

OUTLINE AND STUDY OBJECTIVES

READING: MAGNETISM AND ELECTRICITY

QUESTIONS ON THE READING

USEFUL EXPRESSIONS

TAPE 2405A

TAPE 2405B

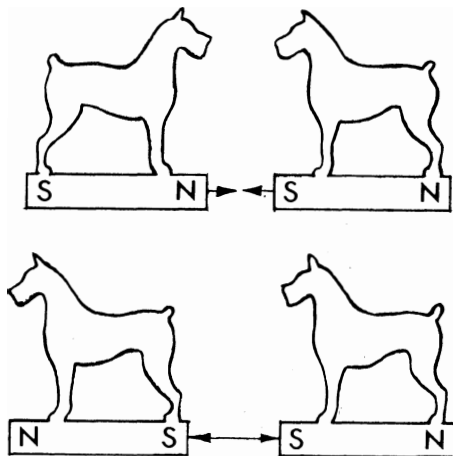
UNIT 2405

READING

MAGNETISM AND ELECTRICITY

People have known about magnets for many *centuries* (hundreds of years). Up to the 16th century, the attracting property of magnets was considered more magical than scientific. Many legends were told about the magic of magnets. One famous story from Greece is about a magnetic mountain that would pull all the nails out of a ship. Any ship that passed near the mountain would fall apart.

In the 16th century, a man discovered another property of magnets. He found out that each magnet has a north and south pole. Furthermore, he found out that *like* (similar) poles repel each other and unlike poles attract each other. A good illustration of this is a small toy for children. The toy consists of two dogs which are on top of two bar magnets. Study the illustrations carefully and see why there is attraction in one and repulsion in the other.



QUESTIONS ON THE READING

1. How long have people known about magnets?
2. What did they think about magnets before the 16th century?
3. How many poles attract each other?
4. Which poles attract each other?
5. Which poles repel each other?

It was also discovered that the earth acts as a huge magnet. A bar magnet reacts to the earth as it does to any other magnet. A compass contains a magnet that rotates freely. The *needle* (magnet) of the compass always points north and, therefore, provides a reference. This is a great help to navigators.

1. Why does a magnet react to the earth?
2. Is a compass needle a magnet?
3. Why does a compass needle always point north?
4. How did a compass help navigators?
5. In how many ways does a magnet react to another magnet?

A substance with an electrical charge has some properties of a magnet. When you comb your hair, you sometimes notice that the comb attracts small bits of paper or other light material. This is because your comb is made of hard rubber, and it acquires an electrical charge when you comb your hair. A glass rod will also acquire an electrical charge when you rub it on silk. Your comb has a negative charge and the glass rod has a positive charge. Like charges repel each other; unlike charges attract each other.

1. What kind of charge does the comb have?
2. What kind of charge does the glass rod have?
3. Would two electrically charged combs attract each other? Why?
4. Would an electrically charged comb and an electrically charged glass rod repel each other? Why?
5. Would two electrically charged glass rods repel each other? Why?
6. In which way is the reaction of the electrically charged objects and magnetic poles similar?

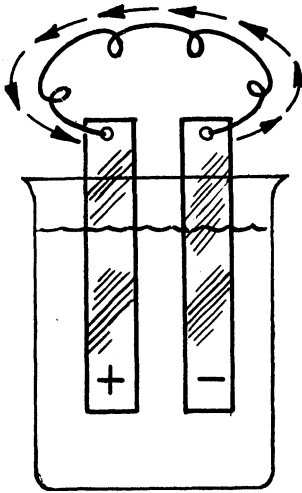
An explanation can be made in regard to the actions of the electrically charged comb and glass rod. Normally, the comb and glass rod contain a certain amount of electrons. When you comb your hair, the comb acquires extra electrons. Any object with an excess of electrons has a negative

The glass rod loses some of its electrons when rubbed on silk. Any object that has less than its normal amount of electrons has a positive charge.

1. What does the comb and glass rod contain?
2. What does the rubber comb pick up when you comb your hair?
3. What is lost by the glass rod when rubbed on silk?
4. What is a negative charge?
5. What is a positive charge?

When a negatively charged comb touches a positively charged glass rod, some of the excess electrons from the comb go to the glass rod. If they do not touch each other, the transfer is usually impossible unless a conductor is used. Silver, copper, and most metals are good conductors. A good conductor is any substance that allows the electrons to move freely through it. You can compare a conductor to a water pipe which allows water to go from one tank to another. An electric wire serves the same purpose.

1. What substances are good conductors?
2. Explain what happens when a negatively charged comb touches a positively charged glass rod.
3. How can electrons move from the comb to the glass rod even though they do not touch each other?
4. Compare an electric wire to a water pipe.



So far you have been reading about static electricity. The rubber comb and glass rod had static electricity. It is not useful to man because it is not controlled. Static electricity causes such minor things as paper to “stick” to your comb. It also causes lightning which kills many people in the United States each year.

We can produce a more *controllable electric current* (movement of electrons through a conductor) through chemical action. Chemical action occurs when two different kinds of metal are placed in an acid solution. Basically one metal gains electrons. Therefore, if you connect the two pieces of metal with a conductor, the excess electrons from one metal move to the other. This chemical action occurs in all batteries.

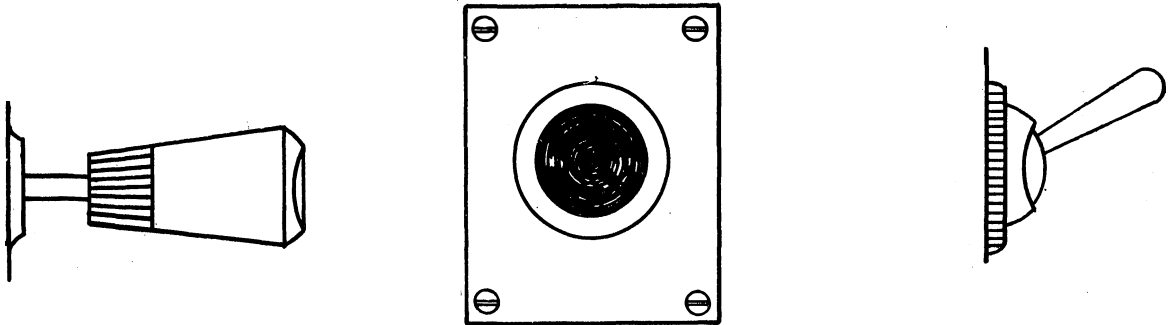
1. Give two examples of static electricity.
2. What gives us a more controllable electric current?
3. Do both metals remain the same when placed in the acid solution?
4. How are the excess electrons transferred from one metal to the other?

Batteries, however, are not our greatest source of electricity. Batteries are used for small machines and tools such as portable radios, flashlights, cars, and airplanes. Only generators can supply a big city with enough electrical energy for its needs. A generator uses magnets to produce an electric current. Some generators are small and are used in such things as an automobile's electrical system. Other big generators produce electricity many miles away from a city and send it with enough energy for all the city lights, factories and other private and industrial needs.

USEFUL EXPRESSIONS

1. A generator *produces* (generates) electricity.
2. There are many kinds of generators.
3. A volt is a unit of measurement in electricity.
4. A high voltage line is very dangerous.
5. An electric shock can easily kill a person.
6. A person who works with electric equipment is generally referred to as an electrician or an electrical repairman.
7. If an electrical repairman specializes in some specific area, he may be called a radio repairman, television repairman, or radar repairman.
8. A switch may turn on or off an electric current.

9. Switches may have different shapes. They may look like a knob, button, or lever.



10. You turn a knob, push a button and pull a lever.
11. Some switches automatically turn themselves on or off.
12. An automatic electric heater switch is called a thermostat.
13. An electric heater or refrigerator has a thermostat.
14. Copper wires are used to carry an electric current.
15. An electric current flows more easily through a thick wire than thin wire.
16. An electrical circuit has a wire which connects a positive pole to a negative pole.
17. The electric current flows through the conductor in an electrical circuit.
18. An electromagnet is an iron bar or rod that becomes a magnet when the electricity is turned on.
19. When the current is turned off, the electromagnet loses its magnetism.
20. An electromagnet can be used to lift heavy pieces of iron.

TAPÉ 2405A

Listen.

Let's practice the pronunciation of some key words and phrases.

Listen and repeat.

effects of magnetism	*	effects of magnetism	*
We know a lot about the effects of magnetism.			*
bar magnet	*	bar magnet	*
The compass needle is an example of the bar magnet.			*
powerful electromagnets	*	powerful electromagnets	*
Powerful electromagnets are used to produce electricity.			*
suspended in a horizontal position	*	suspended in a horizontal position	*
Suspended in a horizontal position, the bar magnet points nearly north and south.			
magnetized spots	*	magnetized spots	*
Poles are magnetized spots on the magnet.			*
like poles repel	*	like poles repel	*
Like poles repel each other.			*
unlike poles attract	*	unlike poles attract	*
Unlike poles attract each other.			*

Listen.

Listen to the following sentences. Answer the questions when you hear **. Repeat the correct answer when you hear *

Like poles repel each other. Unlike poles attract each other. In other words, the ends of magnets with similar magnetic force push apart. Whereas, the ends of magnets with dissimilar magnetic power draw together.

What is another word for repel?	**
push apart	*
What is another word for attract?	**
draw together	*
What is another word for unlike poles?	**
dissimilar poles	*
What is another word for like poles?	**
similar poles	*

Which poles attract each other? **
unlike or dissimilar poles *

Which poles repel each other? **
like or similar ones *

Listen.

Poles are magnetized spots on the ends of the magnet. The ends of the magnets have strong magnetic force or attraction. The magnetic force diminishes toward the center of the magnet.

Which parts of the magnet have powerful magnetic force? **
the ends *
The ends have powerful magnetic force. *

What happens to this force toward the center of the magnet? **
it diminishes *
It becomes less powerful. *

What are poles? **
magnetized spots *
Poles are magnetized spots. *

Listen.

Electricity is generated or converted in two main ways: chemically and mechanically. The flashlight and the car battery are examples of devices used to convert electricity chemically. The generator and the magneto are familiar examples of devices used to convert electricity mechanically.

In how many main ways is electricity generated? **
two *
It is generated in two main ways. *
Electricity is generated in two main ways. *

What are the two major ways? **
chemically and mechanically *
The two major ways are chemically and mechanically. *

What is a familiar device used to change chemical energy to electrical energy? **
the automobile battery *
The automobile battery is a familiar device. *

What is a familiar device used to change mechanical energy to electrical energy? **
the generator *
The generator is a familiar device. *

Listen to the following dialog.

- Student: Do scientists know what electricity is?
- Instructor: Scientists tell us that they do not know exactly what electricity is. Yet, we know how to produce it, transmit it, and to use it to do work for us.
- Student: In how many different ways is electricity mostly produced?
- Instructor: In two ways: chemically and mechanically. The flashlight battery and the car battery are familiar examples of electricity produced chemically.
- Student: I noticed that you spoke about *producing* electricity. Is it actually produced?
- Instructor: No, it isn't. To be more exact, we *convert* energy.
- Student: Chemical energy then is converted into electric energy, isn't it?
- Instructor: That's correct. Mechanical energy is converted to electric energy to light our homes and drive our machines.
- Student: Water in motion, steam in motion, the gasoline and the diesel engines in motion are examples of mechanical energy.
- Instructor: Right. Generators and magnetos are familiar examples of devices used to transform mechanical energy into electrical energy.
- Student: Are generators and magnetos different?
- Instructor: Yes, but let's not discuss that here. Just remember that both the generator and the magneto change mechanical energy into electrical energy.

Repeat.

- Do scientists know what electricity is? *
- Scientists tell us that they do not know exactly what electricity is. *
- Yet, we know how to produce it, to transmit it, and to use it to do work for us. *
- Name two ways in which electricity is produced. *
- chemically and mechanically *
- The flashlight battery and the car battery are familiar examples of electricity produced chemically. *
- I noticed that you spoke about producing electricity. *

Is it actually produced?

*

No, it isn't. To be more exact, we convert or transform energy.

*

Chemical energy then is converted into electric energy, isn't it?

*

That's correct. Mechanical energy is converted to electric energy to light our homes and drive our machines.

*

Water in motion, steam in motion, the gasoline and the diesel engines in motion are examples of mechanical energy.

*

Right. Generators and magnetos are familiar examples of devices used to transform mechanical energy into electrical energy.

*

Are generators and magnetos different?

*

Yes, but let's not discuss that here.

*

Just remember that both the generator and the magneto change mechanical energy into electrical energy.

*

TAPE 2405B

Listen.

Magnets are used to remove particles of iron or steel from wounds in the eye. The powerful electromagnet is especially useful for lifting heavy pieces of metal. When the current is turned on, the electromagnet attracts and holds the pieces of metal. Then when the current is turned off, the load is dropped.

Listen and repeat.

from the eye	*
from the eye	*
to remove metal particles	*
to remove metal particles	*
to remove metal particles from the eye	*
to remove metal particles from the eye	*
Magnets are used to remove metal particles from the eye.	*
Magnets are used to remove metal particles from the eye.	*

for lifting heavy pieces of metal	*
for lifting heavy pieces of metal	*
The electromagnet is useful for lifting heavy pieces of metal.	*
The electromagnet is useful for lifting heavy pieces of metal.	*

the magnet holds the objects	*
the magnet holds the objects	*
When the current is turned off, the magnet drops the objects.	*
When the current is turned off, the magnet drops the objects.	*

Magnets are used to remove metal particles from the eye.	*
--	---

They are also used to remove metal particles from wounds.	*
---	---

Electromagnets are used to lift heavy pieces of metal.	*
--	---

The electromagnet holds the pieces of metal.	*
--	---

It holds them when the current is turned on.	*
--	---

When the current is turned off, it drops the pieces of metal.	*
---	---

Powerful electromagnets are very useful for lifting heavy metal objects.	*
--	---

Listen and answer. Do not repeat the questions.

What are powerful electromagnets useful for?	**
for lifting heavy metal objects	*
They are useful for lifting heavy metal objects.	*

Does the magnet drop or hold pieces of metal when the current is turned off? **
 drops them *
 It drops them. *

What happens when the current is turned on? **
 It holds the pieces of metal. *
 The magnet holds the pieces of metal. *

What do doctors use the magnets for? **
 for removing metal particles *
 Doctors use magnets for removing metal particles from wounds in the eye. *

Listen and repeat.

Turn the tape recorder on. *
 Turn the switch to "ON." *
 Turn the knob to "ON." *

Turn the tape recorder off. *
 Turn the switch to "OFF." *
 Turn the knob to "OFF." *

Turn the engine on. *
 Turn the starter switch to "ON." *
 Turn the ignition switch to "ON." *
 Turn the engine off. *
 Turn the starter switch to "OFF." *
 Turn the ignition switch to "OFF." *

Leave the switch in the "ON" position. *
 Leave the switch in the "OFF" position. *

 Listen.

Let's practice some question patterns.

Listen and repeat.

How did the magnet get its name? *
 How did the Mississippi River get its name? *
 How did you come to the United States? *
 How did he go to town? *

How long have people known about magnetism? *
 How long have you known about the accident? *
 How long have you been at Lackland? *
 How long have you been in the United States? *
 How long have you studied English? *

- What was an early use of the bar magnet? *
- What was an early use of the compass? *
- What was an early use of the helicopter? *
- What was an early use of the microscope? *
- How are generators usually driven? *
- How are large ships usually driven? *
- How are trains usually driven? *

You will need pencil and paper for a short dictation exercise. You may correct your work during the playback if necessary. Give your paper to the instructor for review.

First, you will listen to the reading of the paragraph. This time it will be read in a normal manner. Then, you will write the sentences as the speaker reads slowly and carefully. You may correct sentences during the final normal reading.

Ready, here is the paragraph.

A car has a battery and a generator. The electrical energy of the battery is used to start the engine. If the battery is weak, the car may not start. Once the car starts, the engine causes the generator to produce electrical energy. Then the generator supplies all the electrical energy needed to operate the electrical system of a car. Without a renewal of energy by the generator, the battery would soon be too weak to start the engine.

AMERICAN LANGUAGE COURSE**UNIT 2406****OUTLINE AND STUDY OBJECTIVES**

READING: ACCIDENT PREVENTION

QUESTIONS ON THE READING

SAFETY DIRECTIONS

COMPLETION EXERCISE

PROVERBS AND WISE SAYINGS

TAPE 2406A

TAPE 2406B

UNIT 2406

READING

ACCIDENT PREVENTION

Remember, lives will be in your hands. Your own life as well as others. So *plan your work with safety in mind.*

Before you start the job, any job, *think it over* (consider it). Ask yourself some questions about it. What am I trying to *accomplish* (do)? How far do I *tear the unit down* (disassemble — take it apart)? Where will I place my tools? What precautions are to be *exercised* (used)? What are the possibilities of fire? Explosion? Breakage? Where is the nearest fire extinguisher? These are but a few of the things we should ask ourselves before starting a job.

Have students read each of the following paragraphs at least twice. Be sure that they understand what the paragraphs contain.

*Housekeeping*

Keep the work area clean. When you do this, the amount and quality of work increases and the accident rate goes down. If oil is spilled, clean it up immediately. Old parts should be disposed of at once. Place waste and trash in suitable containers. Put away all items not needed for the job being done.

QUESTIONS ON THE READING

After the students have answered each question, the instructor asks the students "why"?

1. If oil is spilled, what should you do?
2. When should this be done?
3. What should be done with old parts?
4. What should be done with waste and trash?
5. If an item is not being used on a job, what should you do with it?
6. How could spilled oil cause an accident?
7. Explain how old parts could be a hazard.
8. How might waste and trash cause an accident?
9. Explain how unused items might cause an accident.

Fire Prevention is closely *allied* (connected) with good housekeeping. In fact, good housekeeping, as it *applies* (relates) to the work area, is the best fire-prevention system yet found. Here are a few precautions. Perhaps you can add others of your own.

1. Do not allow oily rags to *accumulate* (collect) in open piles.
2. "No Smoking" signs are placed in some areas by regulations. They mean it is *illegal* (against regulations) to smoke.
3. If your clothes become *saturated* by (full of) fuel or oil, take them off as soon as possible.
4. Don't smoke within 50 feet of a hangar or parked aircraft.
5. Never store *flammables* (things easily ignited) in open containers.



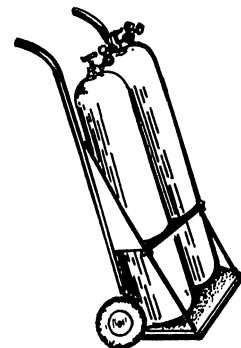
1. Why are oil rags a hazard?
2. Is it illegal to smoke near a "No Smoking" sign?
3. What should you do if your clothing gets soaked with oil or fuel? Why?
4. While smoking, how far should you be from a hangar or aircraft?
5. How should flammable liquids be stored?

Workshop Hazards

Here's a case of an accident which happened a few years ago.

Three men were assigned to *dismount* (take off), *remount* (put on), and *inflate* (put air in) aircraft tires. One of the men was inflating the first tire that had been remounted when he noticed two nitrogen bottles nearby. After some discussion, the three men

tire. It didn't work. An explosion occurred. One man lost his right hand. Another man was struck on the head by part of the wheel. All three men went into *shock**. Causes of the accident were determined to be:



*Very pale, weak pulse, rapid and shallow breathing, occurs because of severe pain and often causes death.

1. Not following the proper procedure.
2. Lack of knowledge and experience.
3. *Inadequate* (not sufficient) supervision.
4. Failure to use a suitable wheel guard.

1. What were the causes of the accident?
2. What was in the bottle the men tried to use?
3. What happened to each of the men?
4. What job were the three men supposed to do?

Flight Line Hazards

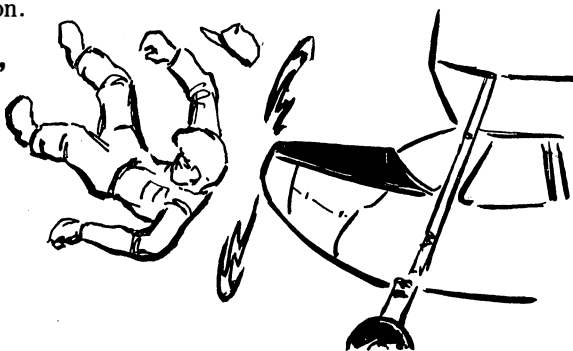
If you ever saw a man walk into a turning propeller, you'd be extra *cautious* (careful) around a flight line. Yet, this has happened many times in the past, and people still walk into them.

Just as dangerous is walking near the intake area or exhaust area of jet engines. A few years ago a student was drawn into the intake duct of an operating jet aircraft. Though quick thinking by an instructor saved the student's life, he was never the same again.

The exhaust end of a jet is just as bad. Here the danger is from the hot gases which are expelled from the tail pipe.

Fire is always a hazard in an aircraft. If fire starts, the man in the cockpit should:

1. Pull the throttle back to the "OFF" position.
2. Turn all tank selector switches to "OFF."
3. Turn off the emergency fuel system.
4. Release the starter switch.
5. Turn off the battery switch.



1. Why is it dangerous to walk near the intake of a jet engine?
2. Why is the exhaust area of a jet engine dangerous?
3. Who saved the student's life in the story?
4. What five things should the man in the cockpit do if a fire starts?

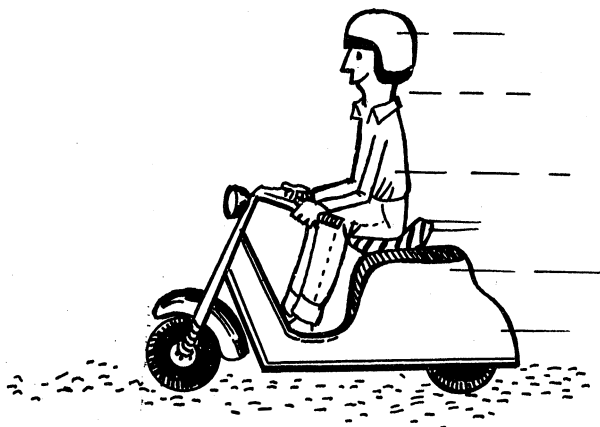
Vehicle Safety Equipment

Here's a case of an accident which happened to a man recently.

A man was riding his motor scooter en route to visit his girl friend. He was proceeding normally on a city street when an automobile suddenly pulled into his path of travel from a side street, turned right in front of the man, and also proceeded normally in advance of the man.

The man on the motor scooter followed this automobile for approximately four blocks, remaining a safe distance of 12–15 feet to the rear of the automobile. Without signaling, the driver of the car suddenly stopped to make a left-hand turn, thereby causing the man on the scooter to strike the rear of the automobile. This collision caused the scooter to overturn onto the concrete roadway and the man landed on his head.

Only minor injury was suffered by the man because he was wearing his *crash helmet*. The value of this personal protective equipment will long be remembered by this man. Had he *disregarded* (not obeyed) the rules of safety, this story could have had a different ending. But now the man realizes that safety equipment is for his own protection and welfare. He did not have to learn the hard way.



1. If two cars are going in the same direction, how far apart should they be?
2. What caused the accident?
3. Why is a scooter dangerous to drive?
4. What safety equipment helped to prevent serious injury to the man?
5. Did this man violate any safety rules? If not, tell what he did correctly.
6. How did the safety equipment mentioned in this lesson prevent serious or perhaps *fatal* (deadly) injury?

SAFETY DIRECTIONS

Safety first.
 Clear the area.
 No smoking in the vicinity of this installation.
 The life you save may be your own.
 Fasten *safety* (seat) *belts*.
 Two-way traffic ahead.
 Authorized personnel only.
 In case of alert, proceed to shelter.
 Firing range, keep out.
 Danger zone.

COMPLETION EXERCISE

Fill in the blanks in the sentences below with appropriate words, phrases, or clauses. Two or more words are required after the asterisk sign (*).

1. If you _____ oil or grease on the floor, you should * _____ at once.
2. Old or broken _____ should be _____ of immediately.
3. Place all _____ and trash in * _____
4. Put away all * _____ or the job * _____
5. Do not let * _____ in open piles.
6. If your clothing gets _____ with gasoline or oil, you should * _____ as soon as possible.
7. Don't smoke * _____ of parked aircraft.
8. Flammable liquids should * _____ in open containers.
9. They decided to use the * _____ for _____ the second _____.
10. Not following the * _____ caused a serious _____.
11. One man lost his * _____, and another was struck * _____ by a * _____.
12. You should be extra _____ around a landing _____ and never walk into a _____ propeller near the _____ or _____ area of jet engines.
13. It's _____ to walk near the intake end of a jet engine because you may be drawn * _____.
14. The danger of getting into the exhaust area of a jet is from * _____ which are _____ from the tail pipe.

PROVERBS AND WISE SAYINGS

Students read and discuss literal and/or figurative meanings of the following.

1. It's like jumping out of the frying pan into the fire.
2. A chain is no stronger than its weakest link.
3. If you would know the value of money, go and try to borrow some.
4. Money is a good servant but a bad master.
5. An ounce of prevention is worth a pound of cure.

TAPE 2406A

Listen.

The phrase “think it over” means about the same as “consider it.” For example, Joe is invited to go fishing. He tells the person who invited him, “I’ll think it over, and call you later,” or, “I’ll consider it and call you later.”

Let’s practice substituting “think it over” for “consider it.” Make the change when you hear**. Repeat the correct change when you hear *. The examples will be in two sentences. Change only the last sentence.

Thank you very much for the invitation. May I have time to consider it? **
 May I have time to think it over? *

I think I can complete the job on time. I need a little time to consider it. ***
 I need a little time to think it over. *

We’re planning a trip to California. Let’s consider it for a while. **
 Let’s think it over for a while. *

I appreciate your invitation very much. Please give me time to consider it. **
 Please give me time to think it over. *

Don’t start a new job in a hurry. Consider it carefully. **
 Think it over carefully. *

I’d like to study the suggestion for a while. I’d like to consider it carefully. **
 I’d like to think it over carefully. *

Listen and repeat.

Thanks very much for the invitation. *
 May I have time to think it over? *

I think I can finish the job on time. *
 However, I need some time to think it over. *

Don’t start a new job in a hurry. *
 Think it over carefully before you start. *

I think your suggestion is good. *
 However, I’d like to think it over. *

Listen.

The phrase “to watch out” means about the same as “to be careful” or “to use precaution.”

Example: A mixture of gasoline vapor and air is highly explosive. Watch out! Be careful!
Use precaution!

Let's practice some sentences containing these phrases.

Repeat the sentences when you hear *. Answer the question when you hear **

If oil is spilled, clean it up immediately. *

If oil is spilled, use precaution. *

What should you do when oil is spilled? **

Watch out! *

Use precaution. *

be careful *

clean it up immediately *

Place waste and trash in suitable containers. *

Use precautions by placing waste and trash in containers. *

Be careful by placing waste and trash in containers. *

Watch out and dispose of waste and trash. *

Where should waste and trash be placed? **

in suitable containers *

Waste and trash should be placed in suitable containers. *

Why should this be done? In order to **

In order to keep the area clean. *

This should be done in order to avoid accidents. *

Waste and trash might cause a fire. *

Someone might slip and fall on account of spilled oil. *

How could spilled oil cause an accident? Someone might **

Someone might slip and fall. *

How could waste and trash cause an accident? They might **

They might cause a fire. *

Waste and trash might cause a fire. *

Be careful! Use precaution! *

Dispose of waste and trash. *

Old parts could be a hazard. *

Someone might trip and fall on old parts. *

Someone might get a bad cut or bruise on old parts. *

How could old parts be dangerous? Someone might . . . **
 Someone might trip and fall on old parts. *

Dispose of old parts. *
 Use precautions! Be careful! Watch out! *
 Old parts are dangerous! *

Listen.

Listen carefully and be ready to answer some questions on the reading. Good housekeeping is the best fire-prevention system yet formed. Here are a few precautions. Do not allow oily rags to accumulate; that is, to collect in open piles. Immediately remove clothes saturated by fuel and oil. I repeat, if your clothes become saturated, take them off as soon as possible. Never store; that is to say, never keep flammables in open containers. I repeat, do not store flammables in open containers.

Listen to the following sentences. Answer when you hear **. Repeat when you hear *

Should flammables be stored in open containers? **
 No, they shouldn't. *

Where should they be stored? **
 in closed containers *
 They should be stored in closed containers. *

Why should they be kept in closed containers? Because **
 Because they might cause a fire. *
 Flammables might cause a fire. *

If your clothes become saturated, what should you do? **
 take them off *
 remove them *
 You should remove them as soon as possible. *

What is the best fire prevention system? **
 good housekeeping *
 Good housekeeping is the best system. *

What is another word for accumulate? **
 collect *
 Accumulate and collect mean about the same here. *

Listen again to this reading and take notes. You may check your notes during playback.

Good housekeeping is the best fire-prevention system yet formed. Here are a few precautions. Do not allow oily rags to accumulate; that is, to collect in open piles. Immediately remove clothes saturated by fuel and oil. I repeat, if your clothes become saturated, take them off as soon as possible. Never store; that is to say, never keep flammables in open containers. I repeat, do not store flammables in open containers.

Flammables might cause a fire.

Place waste and trash in suitable containers.

Watch out, and dispose of waste and trash.

This should be done in order to avoid accidents.

Waste and trash might cause a fire.

Someone might slip and fall on account of spilled oil.

Be careful! Use precaution!

Someone might get a bad cut or bruise on old parts as well.

If oil is spilled, clean it up.

Watch out! Be careful!

TAPE 2406B

Listen.

Accidents frequently happen in the workshop, and this is why you should always be careful of workshop hazards. Remember – accidents don't just happen – they all have causes. These causes are known as hazards.

Listen and repeat the following workshop hazards.

carelessness	*
inadequate supervision	*
lack of knowledge and experience	*
not following the proper procedure	*

Listen and repeat.

Accidents don't just happen.	*
Accidents have causes.	*
Causes are hazards.	*
Hangar hazards can injure or kill you if you're not careful.	*

Listen and answer the following. Answer when you hear **. Repeat when you hear **.

What are some hangar hazards?	**
carelessness	*
inadequate supervision	*
lack of knowledge and experience	*
not following the proper procedure	*

Listen.

If you want to stay alive around a landing strip or flight line, you should be extra careful. It's very dangerous to be around a flight line when you do not know the flight-line hazards. Every year many persons are killed by turning propellers, by walking near the suction of the intake area, or by walking near the exhaust area of jet engines where hot gases are expelled from the tail pipe. Fire also is always a hazard on the flight line. When a fire starts, the man in the cockpit should turn off the throttle, turn all tank selector switches to off, including emergency fuel system, turn off the battery switch, and release the starter switch.

Listen and answer the following. Answer when you hear **. Repeat when you hear *.

Should you be careful around a flight line? **
 Yes, you should be extra careful. *

Why should you be careful around a flight line? **
 because there are many flight-line hazards. *

What are some hazards near an airstrip? **
 turning propellers *
 intake and exhaust areas of jet engines *
 hot gases expelled from the tail pipe *
 fire *

Why is the exhaust area of a jet engine dangerous? **
 because of the hot gases which are expelled from the tail pipe *

Why is it dangerous to walk near the intake of a jet engine? **
 because there is a strong suction, and one can be drawn into the intake duct *

Listen.

The expressions, "I'm trying to accomplish my homework," and, "I'm trying to *do* my homework" mean the same. In the following statements, and questions, substitute "do" for "accomplish." For example, you will hear: "We can accomplish the job by noon tomorrow."** You should say, "We can do the job by noon tomorrow."

He can accomplish the job in a day or two. **
 He can do the job in a day or two. *

How long will it take him to accomplish the job? **
 How long will it take him to do the job? *

Joe is trying to accomplish his homework. **
 Joe is trying to do his homework. *

What are they trying to accomplish? **
 What are they trying to do? *

Accomplish one thing at a time. **
 Do one thing at a time. *

You can accomplish more by working together. **
 You can do more by working together. *

Listen.

The sentences, "The tea was too sweet." "It was saturated with sugar." and, "The tea was too sweet; it was full of sugar" mean about the same. In the following statements and questions substitute "full of" for "saturated with." Make the substitution when you hear **. Repeat the responses when you hear *.

The coffee was too sweet. It was saturated with sugar. **
 The coffee was too sweet. It was full of sugar. *

The water was too salty. It was saturated with salt. **
 The water was too salty. It was full of salt. *

Was the tea saturated with sugar? **
 Was the tea full of sugar? *

The water is saturated with salt. **
 The water is full of salt. *

My shirt was saturated with oil. **
 My shirt was full of oil. *

His trousers were saturated with gasoline. **
 His trousers were full of gasoline. *

 Listen.

The expression “flammable” and “easily ignited” mean the same. Substitute “flammable” for “easily ignited” in the following sentences. Repeat the responses when you hear *

Oily rags are easily ignited. **
 Oily rags are flammable. *

Be extremely careful with gasoline. It is easily ignited. **
 Be extremely careful with gasoline. It is flammable. *

Never put things easily ignited in open containers. **
 Never put flammables in open containers. *

Store easily ignited things in closed containers. **
 Store flammables in closed containers. *

Where should easily ignited things be put? **
 Where should flammables be put? *

Where should you store easily ignited materials? **
 Where should you store flammable materials? *

Handle easily ignited materials carefully. **
 Handle flammable materials carefully. *

Gasoline is easily ignited. Handle it with care. **
 Gasoline is flammable. Handle it with care. *

AMERICAN LANGUAGE COURSE

UNIT 2407

OUTLINE AND STUDY OBJECTIVES

READING: OIL AND ITS USES

QUESTIONS ON THE READING

SENTENCES FOR PRACTICE IN FLUENCY

SPECIAL EXPRESSIONS

PROVERBS AND WISE SAYINGS

TAPE 2407A

TAPE 2407B

UNIT 2407

READING

OIL AND ITS USES

The instructor will read or rephrase the following paragraphs. Books closed if possible.
The student may take notes or simply listen to the instructor as he reads or speaks.
The student should be prepared to answer questions on the material.

Petroleum has been known for thousands of years. Over 2000 years ago, it was found around the Black Sea. Even then it was used for heating, cooking, making roads, and for lubrication. The Chinese, using *primitive* (crude) tools, *drilled* (made holes in the ground) for oil over 5000 years ago. However, it was many centuries later that *systematic* (methodical) drilling made possible the present petroleum era.

It was in Pennsylvania, USA, in 1859, that the *oil boom* (rapid growth) first began. Here a well was drilled to a depth of 59 feet, and it was a flowing well. Two years later the first oil refinery went into operation.

QUESTIONS ON THE READING

1. How long has man known about petroleum?
2. What were some of its early uses?
3. Who were the first people to drill for oil?
4. Where was the first producing oil well in the U.S.?
5. When was this well drilled?
6. How deep was it?
7. When was the first refinery built?

The search for this "liquid gold" began shortly after 1900. Soon pools or deposits were discovered in all parts of the world, on every continent. The demand for oil increased much after 1900 because the mechanical, electrical era was growing rapidly. Oil was used for fuel to provide power for machines. It was used for lubrication. Kerosene was used to light lamps in millions of homes and for heating and cooking purposes.

Petroleum that is pumped out of the ground is not immediately useful. Like most things that we take from the ground, it must be *refined*. Basically, crude oil goes through a heating process. At different temperatures, the different kinds of oil are separated from the *crude* oil. Through this process all the products, such as gasoline, kerosene, and oil are separated from each other. After many *processes*, there are about 5400 products which are made from oil.

1. Can petroleum be used as it comes from the oil well?
2. Where is the crude oil sent first?
3. How do different temperatures affect crude oil?
4. How many different products are made from oil?

There are many different uses of oil. It is used as a *cleaning fluid* to clean guns, clothes, and in some soaps to clean many things. Oil is often used on metals as rust preventive. Some medicines and many insecticides contain products that come from oil. Some *plastics*, some shoes and tires, and most paints also make use of oil products. Of course, fuels and lubricants are major petroleum products.

1. Why is oil often used on metals?
2. Name two major petroleum products.
3. Name some things we clean with cleaning fluid.

Where did the petroleum come from? How did it form? When? We cannot be absolutely certain about these questions. However, it is generally believed that the simpler forms of marine life, plant and animal, were the source of most of the oil and gas. How these solids were transformed into liquid form is not known. We can only be sure that the entire process required millions of years. The degree of heat involved, the amount of pressure, the chemical actions – none of these has yet been determined.

1. What is the primary source of oil?
2. Do we know exactly how oil was formed? (Complete sentence)
3. How many years? (Estimate)
4. What degree of heat was required?
5. What was the amount of pressure?
6. What chemical actions took place?

SENTENCES FOR PRACTICE IN FLUENCY

1. Petroleum products include both oil and gas. Crude oil is refined into gasoline which is used in automobiles and aircraft. Reciprocating engines use gasoline, but jet engines normally use jet fuel known as JP-4.
2. There are three major classes of lubricating oils – light, medium, and heavy. Each class has different uses. Light oils are used in many household machines. Medium lubricating oils are used in aircraft, and automobiles. Heavy oils are used in transmissions. These are not the only uses of the three grades of oil.
3. Solids were transformed into liquids. The process required millions of years, but we do not know exactly how it took place.

4. The mechanic examined the oil. He noticed that it was very dark and that it felt dirty. So he decided to make an oil change at once.
5. In the year 1909, the first service station was established in the U.S. There were still few cars at that time, but after the Model-T Ford was built the need for service stations increased rapidly.
6. The average petroleum is a greenish-brown liquid. However, the color varies. It may be yellow, green, amber, red, purple, or black.
7. The use of petroleum products has increased much in recent years. Most of this increase has occurred because of the increase in mechanical devices. Many new by-products, however, such as soaps, paint driers, and medicines have been discovered.
8. Most machines have a lubricating system which uses some kind of oil. Oil tanks, oil lines, and pressure gauges are essential parts of this lubricating system.
9. Oil has viscosity which is its resistance to flow. This means the thickness or thinness of a fluid or the speed at which it will pour. Temperatures may affect somewhat the viscosity of a liquid.
10. Some oil wells have sufficient gas pressure for the oil to flow into storage tanks. Other wells do not have this gas pressure and require pumps to bring the oil to the surface.

SPECIAL EXPRESSIONS

1. *You've had it* = to be in trouble as the result of something you have done.
If the sergeant hears about this, you've had it.
2. *Work it out* = solve
This is your baby (problem). Don't ask me to work it out for you.
3. *Water under the bridge* = a past event
I know you made a serious mistake. But you can't do anything about it. It's water under the bridge.
4. *Wind up* = finish
This is a high priority project. We must wind up the job within a week.
5. *It's up to you* = It depends on you.
You are in charge of the operation. It's up to you to wind it up as soon as possible.

PROVERBS AND WISE SAYINGS

Students read and discuss literal and/or figurative meanings of the following.

1. The early bird gets the worm.
2. People who live in glass houses shouldn't throw stones.
3. A journey of 100 miles begins with one step.
4. Beauty is only skin deep.

TAPE 2407A

Listen.

Let's practice for a note-taking exercise by repeating the main words of some sentences.

Listen and repeat.

petroleum known thousands of years	*
found around Black Sea	*
used for heating, cooking, and lubrication	*
Chinese drilled for oil	*
drilling made possible petroleum era	*

Now, listen to the following reading and take notes. Listen carefully for the main words in the sentences.

Petroleum has been known for thousands of years. Over 2000 years ago, it was found around the Black Sea. Even then it was used for heating, cooking, making roads, and for lubrication. The Chinese, using primitive tools, drilled for oil over 5000 years ago. However, it was many centuries later that systematic drilling made possible the present petroleum era.

Now, let's practice expanding the main words.

Listen and repeat.

petroleum known thousands of years	*
petroleum known thousands of years	*
Petroleum has been known for thousands of years.	*
found around Black Sea	*
found around Black Sea	*
Over 2000 years ago, it was found around the Black Sea.	*
used for heating, cooking, and lubrication	*
used for heating, cooking, and lubrication	*
Even then it was used for heating, cooking, making roads, and for lubrication.	*
Chinese drilled for oil	*
Chinese drilled for oil	*
The inventive Chinese drilled for oil over 5000 years ago.	*
drilling made possible petroleum era	*
drilling made possible petroleum era	*
Centuries later systematic drilling made possible the present petroleum era.	*

Listen.

Let's try an easier exercise concerning natural gas.

Listen and repeat.

natural gas petroleum product	*
used primarily for cooking and heating	*
several trillion cubic feet produced	*
lightest petroleum product	*
conveyed by pipe lines	*
carried from the Gulf Coast to industrial areas	*
flows under pressure	*

Now, listen to the following reading and take notes.

Natural gas is a major petroleum product. The product is used primarily for cooking and heating. In a year, several trillion cubic feet are produced. It is the lightest petroleum product. Natural gas is conveyed by pipe lines. Pipe lines carry the product from the Gulf Coast to eastern industrial areas. The gas flows through the pipes under pressure.

Listen.

Now, let's practice expanding the main elements.

Listen and repeat.

natural gas petroleum product	*
natural gas petroleum product	*
Natural gas is a major petroleum product.	*
used primarily for cooking and heating	*
used primarily for cooking and heating	*
The product is used primarily for cooking and heating.	*
several trillion cubic feet produced	*
several trillion cubic feet produced	*
In a year, several trillion cubic feet are produced.	*
lightest petroleum product	*
lightest petroleum product	*
It is the lightest petroleum product.	*
conveyed by pipe lines	*
conveyed by pipe lines	*
Natural gas is conveyed by pipe lines.	*

carried from the Gulf Coast to industrial areas *

carried from the Gulf Coast to industrial areas *

Pipe lines carry the product from the Gulf Coast to eastern industrial areas. *

flows under pressure *

flows under pressure *

The gas flows through the pipes under pressure. *

Listen and answer. Give short and complete answers when you hear **.

Natural gas is a major petroleum product.

What is a major petroleum product? **

natural gas *

Natural gas is a major petroleum product. *

The product is used primarily for cooking and heating.

What is the product used for? **

primarily for cooking and heating *

The product is used primarily for cooking and heating. *

In a year, several trillion cubic feet are produced.

How many cubic feet are produced? **

several trillion cubic feet *

In a year, several trillion cubic feet are produced. *

It is the lightest petroleum product.

Is it the heaviest or the lightest petroleum product? **

the lightest *

It is the lightest petroleum product. *

Natural gas is conveyed by pipe lines.

How is natural gas conveyed? **

by pipe lines *

Natural gas is conveyed by pipe lines. *

Pipe lines carry the product from the Gulf Coast to eastern industrial areas.

What carries the product from the Gulf Coast to eastern industrial areas? **

pipe lines *

Pipe lines carry the product from the Gulf Coast to eastern industrial areas. *

The gas flows through the pipes under pressure.

How does the gas flow through the pipes? **

under pressure *

The gas flows through the pipes under pressure. *

TAPE 2407B

Listen.

Petroleum products include both oil and gas. Crude oil is refined into gasoline which is used in automobiles and aircraft. Reciprocating engines use gasoline, but jet engines normally use jet fuel known as JP-4.

Listen and repeat.

include both oil and gas *
 consist of both oil and gas *

Petroleum products include both oil and gas. *
 Petroleum products consist of both oil and gas. *

Life includes both joy and sorrow. *
 Life consists of both joy and sorrow. *

Communication includes both listening and talking. *
 Communication consists of both listening and talking. *

Listen and answer.

What does communication consist of? **
 both listening and talking *
 Communication consists of both listening and talking. *

What includes both oil and gas? **
 petroleum products *
 Petroleum products include both oil and gas. *

What is jet fuel known as? **
 JP-4. *
 Jet fuel is known as JP-4. *

What do reciprocating engines use? **
 gasoline *
 Reciprocating engines use gasoline. *

What do jet engines use? **
 jet fuel known as JP-4 *
 Jet engines use jet fuel known as JP-4. *

Let's listen to some sentences and then practice the use of some noun and preposition combinations. Repeat when you hear *.

Most machines have a lubricating system which uses some kind of oil. Oil tanks, oil lines, and pressure gages are essential parts of this lubrication system.

part of	*	part of	*
A pressure gage is an essential part of most lubricating systems.			*
An oil tank is a main part of a lubrication system..			*

parts of	*	parts of	*
Oil lines are essential parts of lubricating systems.			*

kind of	*	kind of	*
Most machines use some kind of oil.			*
Most machines need some kind of lubricant.			*

Oil has a quality which is called viscosity. This means the thickness or thinness of a fluid or the speed at which it will pour. Temperatures may affect somewhat the viscosity of a fluid.

the speed at which	*	the speed at which	*
Viscosity means the speed at which oil pours.			*
Cold oil pours slowly.			*
Hot oil pours rapidly.			*
Light oil pours rapidly.			*
Heavy oil pours slowly.			*
Light, hot oil pours very rapidly.			*

viscosity of	*	viscosity of	*
Temperature affects the viscosity of oil.			*

Some oil wells have sufficient gas pressure for the oil to flow into storage tanks. Other wells do not have this gas pressure and require pumps to bring the oil to the surface.

pressure for	*	pressure for	*
Sufficient pressure for the oil to flow.			*
Sufficient pressure for the oil to flow.			*
Some wells have sufficient pressure for the oil to flow into tanks..			*

sufficient to	*	sufficient to	*
sufficient gas to reach my destination			*
sufficient gas to reach my destination			*
I have sufficient gas to reach my destination..			*

sufficient for	*	sufficient for	*
I have sufficient gas for reaching my destination.			*
I have sufficient money for making the trip.			*

I have enough time for studying my lesson.			*
--	--	--	---

Substitute "to" for the word "for" in the following sentences. Change the verb form.

For example, you will hear: I have enough fuel for flying.
 You should say: I have enough fuel to fly.

Remember to substitute the word "to" for the word "for."

We had sufficient time for finishing the examination. **
 We had sufficient time to finish the examination. *

Good lights are essential for driving safely at night. **
 Good lights are essential to drive safely at night. *

Repetition is necessary for learning a language. **
 Repetition is necessary to learn a language. *

Practice is essential for developing a skill. **
 Practice is essential to develop a skill. *

Drill is necessary for developing fluency. **
 Drill is necessary to develop fluency. *

Fuel and oil are necessary for operating many machines. **
 Fuel and oil are necessary to operate many machines. *

Pumps are sometimes required for bringing the oil to the surface. **
 Pumps are sometimes required to bring the oil to the surface. *

Let's practice the pronunciation of some key words and expressions.

systematic study * systematic study *

lubrication system * lubrication system *

process of learning * process of learning *

JP-4 * JP-4 *

transformed into liquid form * transformed into liquid form *

refined product * refined product *

viscosity * viscosity *

by-products * by-products *

Listen.

Useful verbs. Repeat when you hear *.

flows	*	flows	*
The oil flows in pipe lines.			*
increase	*	increase	*
More pressure will increase the flow of oil.			*
poured	*	poured	*
The oil was poured into that container.			*
carry	*	carry	*
Do you carry a cigarette lighter?			*
transformed	*	transformed	*
Crude oil is eventually transformed into synthetic rubber.			*
determine	*	determine	*
Can you determine how this happens?			*

AMERICAN LANGUAGE COURSE

UNIT 2408

OUTLINE AND STUDY OBJECTIVES

READING: NATURAL AND ARTIFICIAL LIGHT

QUESTIONS ON THE READING

SPECIAL EXPRESSIONS

PROVERBS AND WISE SAYINGS

TAPE 2408A

TAPE 2408B

UNIT 2408

READING

NATURAL AND ARTIFICIAL LIGHT

The instructor will read or rephrase the following paragraphs. Books closed. The student may take notes or simply listen to the instructor as he reads or speaks. The student should be prepared to answer questions on the material. The instructor may use questions other than those appearing in the exercise.

The sun is our greatest source of light. We get only a small amount of light from the stars. So we may say that we receive our maximum amount of light from the sun and only a minimum amount from the stars. The sun radiates or sends out light in all directions. The earth receives this radiation from the sun. Actually the earth receives only a small amount of the radiated light which the sun *emits* (radiates). The picture in figure 1 will give you an idea of how the sun's light is *sent out* (emitted) into space.

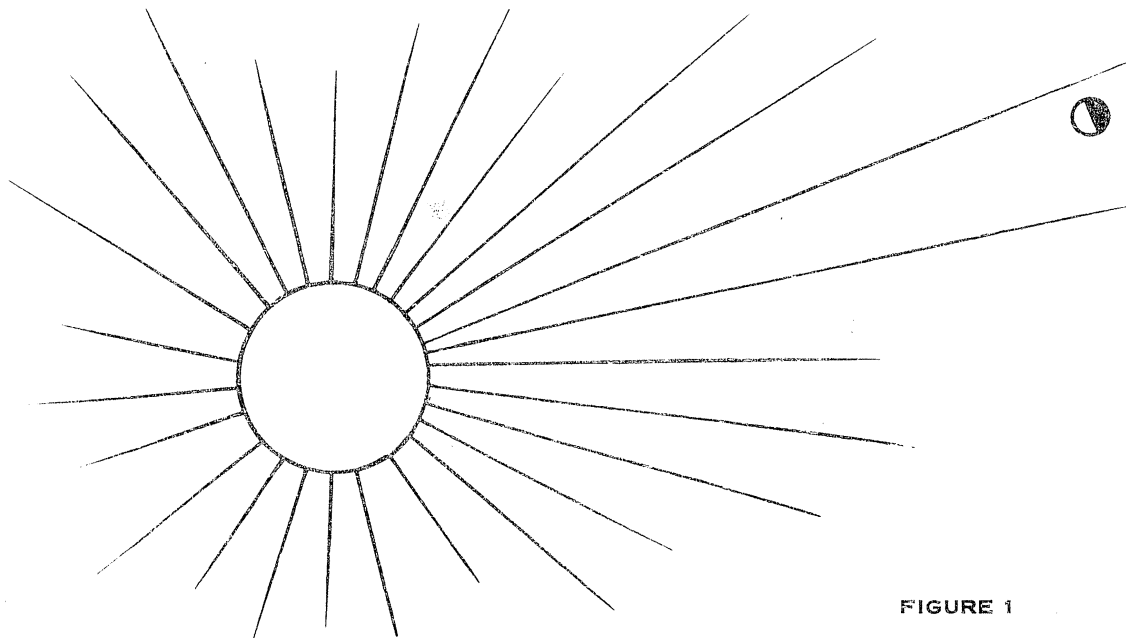


FIGURE 1

QUESTIONS ON THE READING

1. What is the earth's greatest source of light?
2. How much light do we get from the stars?
3. As used here, the words "radiate" and "send out" mean about the same. What is another word used in the reading that means about the same?
4. Does the earth receive all the light that the sun emits?

Light travels at 186,270 miles per second. It is 93,000,000 miles from the earth to the sun. Now, if you or your instructor will divide the speed of light into the distance to the sun, you will find that light will travel to you in 8.3 minutes. This distance and this speed is hard to imagine. In more meaningful terms, you can imagine an object traveling around the world in about 1/7th of a second.

1. What is the speed of light?
2. How long does it take light from the sun to reach you on the earth?
3. If you were traveling at the speed of light, how long would it take you to go around the world?

When we strike a match or light a cigarette lighter, the light produced glows. Thus a radiant or glowing form of energy is released. Light made by man is said to be artificial light. And, of course, light produced by nature is called natural light. The sun is the great source of the earth's natural light. However, both natural light and artificial light come directly or indirectly from the sun. The match and the cigarette lighter fluid simply contain energy which was derived from the sun.

1. What is another word for "radiant"?
2. Is man-made light artificial or natural light?
3. What is the direct and indirect source of natural and artificial light?
4. Where does the energy contained in a match come from?

Light from the sun and the stars is called natural light. We also have artificial or man-made light. Artificial light can be produced either chemically or electrically. We produce chemical light by striking a match, lighting a candle, or by burning any substance. We refer to light produced electrically as electric light. Electric light may be produced in *electric lamps* (light bulbs). Familiar examples are: bulbs in flashlights, automobile lights, and lights in our homes and offices. The familiar light bulb used to light our homes contains tungsten wire. As electricity flows through the *tungsten wire* (filament), heat is produced. (A hot filament may be red in color. A hotter filament would be yellow; and the hottest filament will produce white light.)

1. Name two ways in which artificial light is produced.
2. What are some things that produce chemical light?
3. Name a metal that produces electric light.
4. What is produced when electricity flows through the tungsten wire?
5. Which filament produces white light?

For hundreds of years people didn't know what caused the familiar rainbow. Now we know the colors of the rainbow result from refraction of sunlight. Different colors result from the bending and scattering of light by raindrops.

Late in the seventeenth century Sir Isaac Newton showed that white light is made up of all the colors of sunlight. Figure 2 shows how Newton produced a rainbow.

In his experiment sunlight came through a small hole in the wall of a darkened room. As the light passed through a glass prism it spread out and appeared on a white screen as a band of colors in the order: red, orange, yellow, green, blue, indigo, and violet.

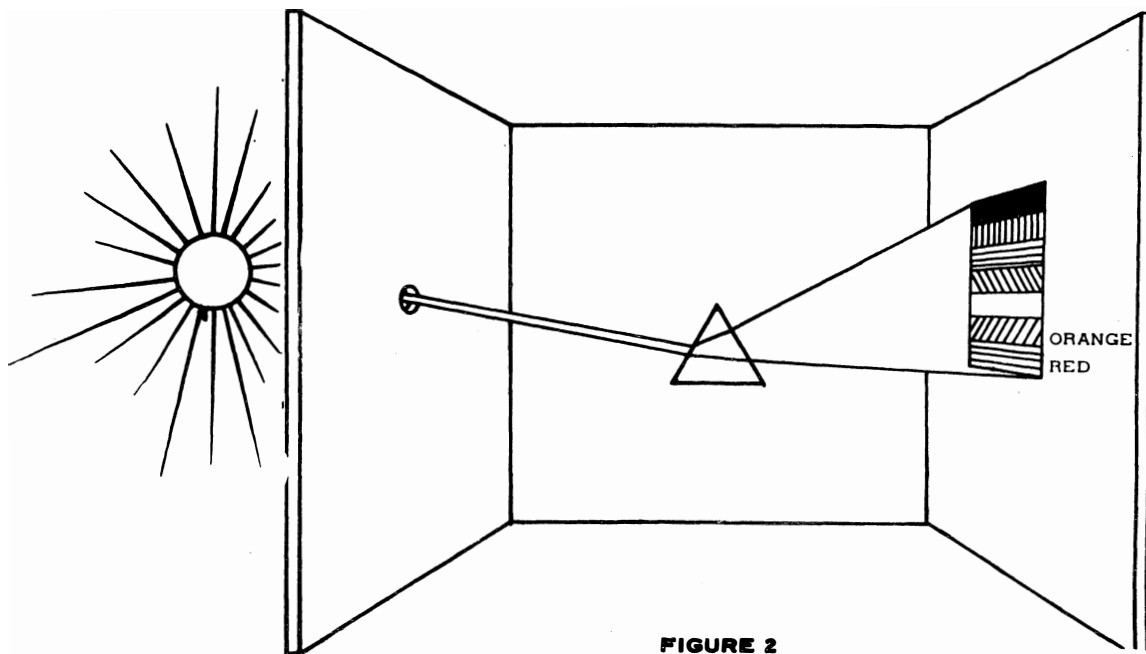


FIGURE 2

A memory aid to help remember colors is Roy G. Biv. This sounds like an American name. Each letter of this name *represents* (stands for) a color: red, orange, yellow, green, blue, indigo, violet.

1. What is white light made up of?
2. What does Roy G. Biv stand for?
3. What effect does a glass prism have on light?
4. How do raindrops affect light?
5. Can light be bent?

SPECIAL EXPRESSIONS

Write sentences for the following special expressions.

On the blink = not functioning.

My watch is on the blink. What time do you have?

There's a catch = difficult point or trick.

He has a good idea, but there's a catch in it. He wants to borrow my car.

A close shave = barely successful; barely avoiding an accident.

We almost ran out of gas, but we made it. It was a close shave.

Crosscheck = verify from different sources.

I want the facts. Check with him and crosscheck with everyone else involved.

Keep an eye on = watch carefully.

One engine seems to be getting too hot. You'd better keep an eye on it.

Get on with = continue.

That's very interesting but let's get on with the lesson.

Get by with = succeed, manage.

We don't always have the best. We have to get by with what we have.

Go along with = agree.

I'll go along with your suggestion. I think it's O.K.

PROVERBS AND WISE SAYINGS

Students read and discuss literal and/or figurative meanings of the following.

1. Don't count your chickens before they are hatched.
2. Genius is 1% inspiration and 99% perspiration.
3. If the blind lead the blind, both will fall into the ditch.

TAPE 2408A

Listen.

When we strike a match or light a cigarette lighter, the light produced glows. Thus a radiant or glowing form of energy is released. Light made by man is said to be artificial light. And, of course, light produced by nature is called natural light. The sun is the great source of the earth's natural light. However, both natural light and artificial light come directly or indirectly from the sun. The match and the cigarette lighter fluid simply contain energy which was derived from the sun.

Listen and repeat.

Most of our light comes from the sun.	*
The stars furnish only a minimum amount of light.	*
That is, they provide a very small amount of light.	*
Light is a radiant form of energy.	*
Light which comes directly from natural sources is natural light.	*
Man-made light is artificial light.	*

Now answer the following questions. Do not repeat the questions. Give short and complete answers. I repeat, do not repeat the questions.

What is the main source of most of the earth's natural light?	**
the sun	*
The sun is the main source.	*
The sun is the main source of the earth's natural light.	*

How much light do we get from the stars?	**
very little	*
only a minimum amount	*
We get only a minimum amount from the stars.	*

What is light?	**
a radiant form of energy	*
Light is a radiant form of energy.	*

What is another word for radiant?	**
glowing	*
Glowing is another word for radiant.	*

Does artificial light refer to man-made or natural light?	**
man-made	*
Artificial light refers to man-made light.	*

Now let's practice substituting the word "for" for the word "to."

For example, you will hear: I have enough fuel to fly to the base.
You should say: I have enough fuel for flying to the base.

Listen to another example: I have sufficient time to finish the job.
You should say: I have sufficient time for finishing the job.

Remember to substitute the word "for" for the word "to." Change the verb form.

I have enough fuel to fly to the base. **
I have enough fuel for flying to the base. *

I have sufficient time to finish the job. **
I have sufficient time for finishing the job. *

We had sufficient time to finish the examination. **
We have sufficient time for finishing the examination. *

Good lights are essential to drive safely at night. **
Good lights are essential for safe night driving. *

Repetition is necessary to learn a language. **
Repetition is necessary for learning a language. *

Practice is essential to develop a skill. **
Practice is essential for developing a skill. *

Drill is necessary to develop fluency. **
Drill is necessary for the development of fluency. *

Fuel and oil are necessary to operate many machines. **
Fuel and oil are necessary for the operation of many machines. *

Pumps are sometimes required to bring the oil to the surface. **
Pumps are sometimes required for bringing the oil to the surface. *

Listen.

The expressions "on the blink" and "out of order" mean about the same. You will hear a sentence in which one of these expressions is used. Then you will hear a question. Answer the question by using both expressions in your answers.

For example, you will hear: "on the blink" = out of order
My watch is on the blink. What is wrong with your watch?"

You should say: "It is on the blink." "It is out of order."

on the blink = out of order

His tape recorder is on the blink. What is wrong with his tape recorder?

**

It is on the blink.

*

It is out of order.

*

His tape recorder is out of order.

*

Listen.

The expressions “keep an eye on” and “watch carefully” mean about the same. expressions in answers to questions you will hear. Repeat the correct responses.

Listen and answer.

Your left rear tire is bad. You’d better keep an eye on it.

What should you do about the bad tire?

**

I’d better keep an eye on it.

*

I’d better watch it carefully.

*

The engine seems to be getting too hot.

What should you do about it?

**

I’d better keep an eye on it.

*

I’d better watch it carefully.

*

Listen.

The expressions “get on with” and “continue” mean about the same. Let’s use these expressions in some sentences.

Listen and repeat.

We have to finish this job by 5 o’clock.

*

Let’s get on with the job.

*

Let’s continue the job.

*

We must finish this lesson today.

*

Let’s continue the lesson.

*

Let’s get on with the lesson.

*

Now we have enough money to finish the project.

*

We can get on with the project.

*

We can continue the project.

*

TAPE 2408B

Listen.

Let's learn some special expressions. The expression "on the blink" means not functioning, out of order, etc.

Listen and repeat.

not functioning	*	not functioning	*
out of order	*	out of order	*
on the blink	*	on the blink	*

What time do you have?			*
My watch is not functioning.			*
My watch is on the blink.			*

Is your car in running order?			*
My car is not functioning right.			*
My car is on the blink.			*

Now substitute "on the blink" in the following sentences. Repeat the correct responses.

My car is not functioning.		**
My car is on the blink.		*

My tape recorder is out of order.		**
My tape recorder is on the blink.		*

His watch is not running.		**
His watch is on the blink.		*

My car is not functioning because it needs a new generator.		**
My car is on the blink because it needs a new generator.		*

My tape recorder is out of order since the batteries are dead.		**
My tape recorder is on the blink since the batteries are dead.		*

His watch is not running for he dropped it on the floor.		**
His watch is on the blink for he dropped it on the floor.		*

The expression "keep an eye on" means watch carefully.

Listen and repeat.

watch carefully	*	watch carefully	*
keep an eye on	*	keep an eye on	*

Doesn't your engine seem to be getting too hot?		*
You'd better watch it carefully.		*
You'd better keep an eye on it.		*

Now substitute “keep an eye on” in the following sentences. Repeat the correct responses.

The engine is getting too hot; I must watch it carefully. **
 The engine is getting too hot; I must keep an eye on it. *

When children are small, parents should watch them carefully. **
 When children are small, parents should keep an eye on them. *

The expression “go along with” means to agree.

Listen and repeat.

agree	*	agree	*
go along with	*	go along with	*

How do you like his suggestion? *
 I don't particularly like it, but I'll agree with it. *
 I don't particularly like it, but I'll go along with it. *

Now substitute “go along with” in the following sentences. Repeat the correct responses.

Although I don't agree with the plans, I'll OK them. **
 Although I don't go along with the plans, I'll OK them. *

I agree with her choice; this dress is the prettiest. **
 I go along with her choice; this dress is the prettiest. *

The expression “pressed for time” means have very little or too little time.

Listen and repeat.

have very little time	*	have very little time	*
have too little time	*	have too little time	*
pressed for time	*	pressed for time	*

Are you going to the party? *
 I am not going to the party, for I have too little time. *
 I am not going to the party, as I am too pressed for time. *

Now substitute “pressed for time” in the following sentences. Repeat the correct responses.

I am not going to study, for I have very little time. **
 I am not going to study, for I am too pressed for time. *

A student cannot study effectively, if he has very little time. **
 A student cannot study effectively, if he is pressed for time. *

The expression “jump to conclusions” means to decide too quickly.

Listen and repeat.

decide too quickly	*	decide too quickly	*
jump to conclusions	*	jump to conclusions	*

How did she like the speech which was given last night?	*
Before the speaker had concluded his speech, she had already decided.	*
Before the speaker had concluded his speech, she had jumped to conclusions.	*
She said she didn't like it.	*

Now substitute “jumped to conclusions” in the following sentences. Repeat the correct responses.

This is serious; don't decide too quickly.	**
This is serious; don't jump to conclusions.	*
He decided too quickly when he accused John of the mistake.	**
He jumped to conclusions when he accused John of the mistake.	*

Now substitute “on the blink” in the following sentences. Repeat the correct responses.

My car is not functioning.	**
My car is on the blink.	*

My tape recorder is out of order.	**
My tape recorder is on the blink.	*

His watch is not running.	**
His watch is on the blink.	*

My car is not functioning because it needs a new generator.	**
My car is on the blink because it needs a new generator.	*

My tape recorder is out of order since the batteries are dead.	**
My tape recorder is on the blink since the batteries are dead.	*

His watch is not running for he dropped it on the floor.	**
His watch is on the blink for he dropped it on the floor.	*

Now substitute “keep an eye on” in the following sentences. Repeat the correct responses.

The engine is getting too hot; I must watch it carefully.	**
The engine is getting too hot; I must keep an eye on it.	*

When children are small, parents should watch them carefully.	**
When children are small, parents should keep an eye on them.	*

AMERICAN LANGUAGE COURSE

UNIT 2409

OUTLINE AND STUDY OBJECTIVES

READING: HEAT

QUESTIONS ON THE READING

QUESTIONS ON WORKBOOK

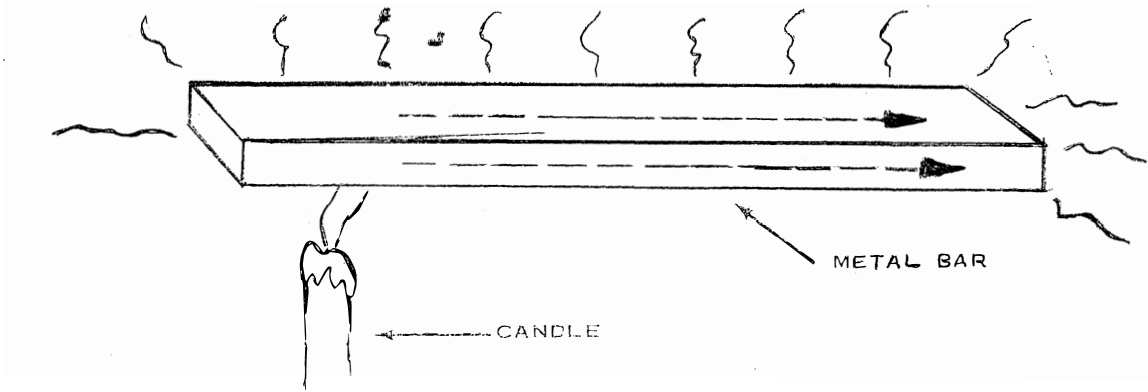
DICTATION

WORD STUDY

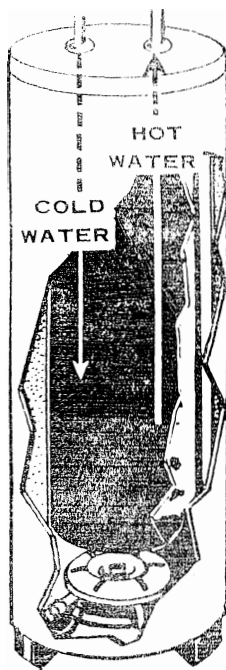
GENERAL ENGLISH USAGE

TAPE 2409A

TAPE 2409B

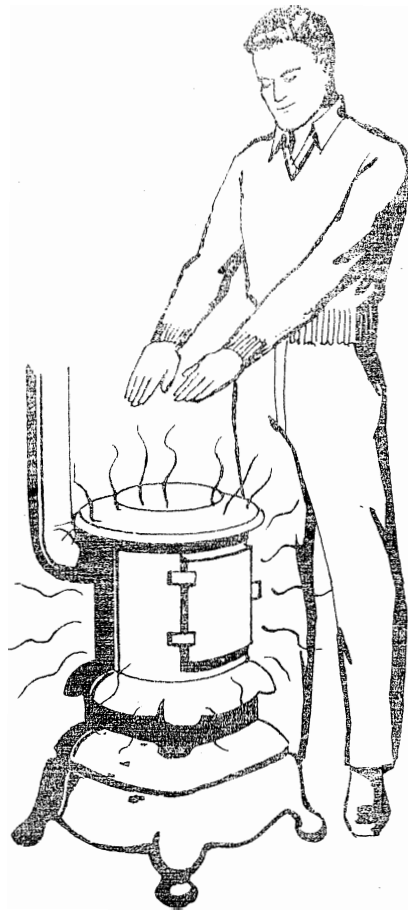


CONDUCTION



WATER HEATER

CONVECTION



STOVE

RADIATION

UNIT 2409

READING

HEAT

We *heard* (listened to) a good *lecture* (speech) on heat this morning. I thought the speech was going to be *dull* (uninteresting) when the speaker began to talk about *conduction* (transmission), *convection* (transfer of heat by moving masses of matter) and *radiation* (emission) of heat energy. However, the instructor made his subject interesting by using many familiar examples to explain those big words. In this part of his lecture, he explained the three ways in which heat travels.

We can understand radiation, as the speaker *explained* (pointed out), by thinking about how the earth receives its heat from the sun, or how things in a room are warmed by a stove. As I understand it, the sun and the stove *send out* (emit) heat waves in all directions. These radiated heat waves move just as water waves spread outward when a stone is thrown into a *body* (mass) of water. Heat waves coming from the sun *furnish* (supply) most of the heating of the earth and its atmosphere. The *uneven* (irregular) way in which this heating takes place is the cause of most weather.

Then he explained the *process* (method) of heating by conduction. We learned that there isn't any movement of *portions* (parts) of matter in conduction. This is not like water *moving* (flowing) through a pipe. Instead, the molecules *hit against* (strike) each other and *pass* (transmit) heat energy from one to another. A familiar example used by the instructor was an iron bar which conducts heat to parts that are not directly in contact with fire. We also learned that those *substances* (kinds of matter) which are good conductors of electricity are also good conductors of heat. Copper, *for instance* (for example), is a good conductor, and wood is a poor conductor. Among the liquids, mercury is the only good conductor.

The transfer of heat by conduction and convection is somewhat similar in that the substances heated are in contact with the source of heat. The instructor used the heating of water as an example of heat transfer by convection. When a *pan* (pot) of water is placed over fire, portions of water near the bottom become *less dense* (lighter) than the other parts. The warmer, lighter water moves upward. The colder, denser portions of the water move downward.

The process of convection is very important in the study of weather. An understanding of the process makes it easier for us to explain wind movements. The last part of the instructor's lecture was on the sources of heat and what heat does.

QUESTIONS ON THE READING

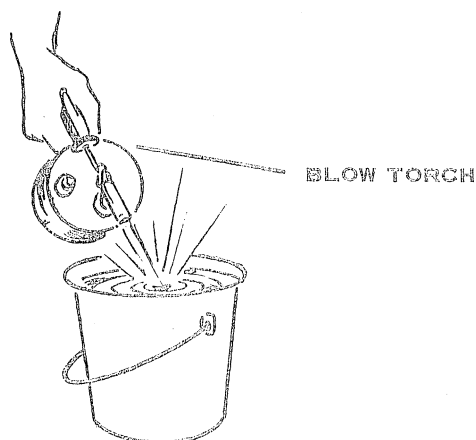
In most instances, students should answer each question with a complete sentence rather than with a word or phrase. This will give students more practice in structure.

1. Why did the writer think the lecture was going to be boring?
2. How did the speaker make his speech interesting?
3. Which factors of heat did he discuss first?
4. What is the name of the process by which the earth receives its heat?
5. What is the cause of most weather?
6. Explain how heat is transferred in a piece of metal.
7. Name some good and some poor conductors of heat.
8. Explain how a vessel of water is heated. What is the process called?
9. Explain how heat affects the density of water.
10. Why is the process of convection important?

QUESTIONS ON WORKBOOK UNIT 2409

1. What does the sun give to the earth?
2. How does heat move through space?
3. Why is a white shirt cooler than a black shirt?
4. How is heat transmitted in metal?
5. Is metal the only thing that transmits heat?
6. Why does cold air or water move downward?
7. Why does hot air or water move upward?
8. What is radiation?
9. What is conduction?
10. What is convection?
11. What is the difference between *reflect* and *absorb*?

12. What are the three ways heat is transmitted?
13. Is it true that heat can move through solids, liquids, and space? Give your reasons for your answers.
14. In the picture below, why would it be very difficult to heat water with a blow torch?



DICTATION

Procedure for Dictation

1. Instruct the students to close their books and to have paper and pencil ready.
2. Read the dictation exercise at normal speed. Students listen.
3. Give the instruction to students: "Now write."
4. Read the first sentence of the dictation *in normal pause groups*.
5. Read the first sentence of the dictation paragraph again, this time without pausing.
6. Follow procedure in 3, 4, and 5 for the remaining sentences.
7. Read the entire paragraph again. Have students check their work.
8. Collect papers and make necessary corrections.

HEAT

We can understand radiation, as the speaker pointed out, by thinking about how the earth receives its heat from the sun, or how things in a room are warmed by a stove. As I understand it, the sun and the stove emit heat waves in all directions. These radiated heat waves move just as water waves spread outward when a stone is thrown into a mass of water. Heat waves coming from the sun supply most of the heating of the earth and its atmosphere. The irregular way in which this heating takes place is the cause of most weather.

WORD STUDY

Substitution Exercise

First, practice repeating the following sentences after the instructor. Books closed.
Then, practice the sentences by substituting the italicized words. Books closed.

1. I thought the lecture was going to be uninteresting (*dull*).
2. The speaker pointed out (*explained*) three ways in which heat travels.
3. The sun emits (*sends out*) heat waves in all directions.
4. We saw a large body (*mass*) of water to the right.
5. The atmosphere is heated unevenly (*irregularly*).
6. I understand the process (*method*) of heating by conduction.
7. Molecules of heated metals hit (*strike*) against each other.
8. Heat energy is passed (*transmitted*) from molecule to molecule.
9. Copper, for instance (*for example*), is a good conductor of electricity.
10. A pan (*pot*) of water was placed over the fire.

Practice-Forming Questions

Read the sentence; then rearrange the sentence into a question.

1. Some metals *absorb* heat much faster than others.
2. An open window *admits* hot air. An open valve *admits* fuel.
3. The temperature *alternated* between hot and cold.
4. The transfer of heat *was* continuous.
5. Heat energy can be *converted* to mechanical power.
6. The engine was *designed* to be air-cooled.
7. The system was *equipped* with a thermostat.
8. The thermostat *regulates* the amount of heat.
9. The temperature was *reduced* from 180° to 120° F.
10. Temperature is *expressed* in degrees – Fahrenheit or centigrade.

GENERAL ENGLISH USAGE

Two-Word Verbs (Separable)

Here are some two-word verbs which are used frequently. Study the two-word verbs and the near equivalents.

1. look over = (review, examine)
2. pick out = (select)
3. take up = (discuss, introduce)
4. take over = (assume control)
5. carry out = (completely accomplish)
6. pass on = (give to another person)
7. cross out = (remove by drawing a line through)
8. bring up = (introduce, present)

Exercise 1.

Read the sentence twice, once with the regular verb and once with the two-word verb.

Example: Inspect the brake system carefully.
 (Look over) the brake system carefully.

1. Did he select *(pick out)* a blue tie?
2. The instructor discussed *(took up)* a new subject yesterday.
3. The new commander is going to assume control *(take over)* next week.
4. We must accomplish *(carry out)* the assignment.
5. Give *(pass on)* the paper to the next student.
6. Please draw a line through *(cross out)* the next sentence.
7. I'll introduce *(bring up)* the matter of two-word verbs tomorrow.

Now the instructor may ask you to substitute the italicized word after he reads the sentences. Books closed.

Exercise 2.

Students will read the following sentences to each other. The students who are listening will have their books closed. Also they will have to repeat what they hear. If a student does not understand, he will ask the student who is reading to repeat the sentence.

1. Look over the brake system carefully.
Look it over carefully.
You'd better look over today's lesson again.
You'd better look it over again.
2. Pick out the longer of the two bolts.
Pick it out.
It is easy to pick out the key words.
It is easy to pick them out.
3. We'll take up straight and level flight tomorrow.
We'll take it up tomorrow.
The instructor took up a new subject today.
The instructor took it up today.
4. The flight leader took over the new flight.
He took it over.
Who is going to take over the next project?
Who is going to take it over?
5. If you carry out the assignment, you will be rewarded.
If you carry it out, you will be rewarded.
They carried out your orders.
They carried them out.
6. Please pass on the information to all the men.
Please pass it on to them.
Will you pass on the list to the next man?
Will you pass it on to him?
7. Cross out the misspelled words.
Cross them out.
Let's cross out the last sentence and rewrite it.
Let's cross it out.
8. Norman brought up an interesting point.
Norman brought it up.
Steve brought up an interesting question.
Steve brought it up.

TAPE 2409A

Listen.

There are three ways in which heat travels. The three ways are CONDUCTION, CONVECTION, and RADIATION. Radiation is most easily understood by thinking about how the earth receives heat from the sun. Heat is emitted by the sun, transmitted through space, and absorbed by the earth.

Listen and repeat.

There are three ways in which heat travels.

conduction * convection * radiation *

Heat travels by conduction, convection, and radiation.

radiates * radiates *

Heat radiates from the sun.

Heat radiates from the sun.

The earth is heated by radiation.

The earth is heated by radiation.

Repeat when you hear * Answer the question when you hear **

In how many ways does heat travel? **

Heat travels in three ways. *

(Remember to answer when you hear two tones.)

Heat travels by conduction, convection, and radiation. *

What are the three ways in which heat travels? **

Heat travels by conduction, convection, and radiation. *

Heat travels by conduction, convection, and radiation. *

by radiation * by radiation *

The earth is heated by radiation. *

The earth is heated by radiation. *

How is the earth heated? **

The earth is heated by radiation. *

The earth is heated by radiation. *

emitted * emitted *

Heat is emitted by the sun. *

Heat is emitted by the sun. *

What is emitted by the sun? **

Heat is emitted by the sun. *

transmitted	*	transmitted	*
Heat from the sun is transmitted through space.			*
Heat from the sun is transmitted through space.			*
What is transmitted through space?			*
Heat from the sun is transmitted through space.			*
Heat from the sun is transmitted through space.			*

Listen.

There are three ways in which heat travels. The three ways are conduction, convection, and radiation. Conduction of heat occurs when heat is transmitted by a conductor. If you stir hot coffee with a metal spoon, the spoon soon feels warm. The heat from the coffee is conducted to your fingers by the spoon. The metal spoon is a conductor. This transfer of heat is called conduction. Heat is conducted in the same manner that electricity is conducted—through a conductor. In fact, substances which are good conductors of electricity are also good conductors of heat. A metal spoon will conduct heat better than a wooden spoon because metal is a better conductor of heat than wood. Metal is also better than wood as a conductor of electricity.

Repeat when you hear one tone. Answer when you hear two tones.

In how many ways does heat travel?	**
in three ways	*
Heat travels in three ways.	*
Heat travels by conduction, convection, and radiation.	*
What are the three ways in which heat travels?	**
by conduction, convection, and radiation	*
Heat travels by conduction, convection, and radiation.	*
Heat is conducted by a conductor.	*
What is heat conducted by?	**
by a conductor	*
Heat is conducted by a conductor.	*
Conduction is one way in which heat is transmitted.	*
Electricity is conducted by a conductor.	*
What conducts electricity?	**
a conductor	*
A conductor conducts electricity.	*
Good conductors of electricity are also good conductors of heat.	*

The three ways in which heat is transmitted are conduction, convection, and radiation. Convection is transfer of heat by means of a moving mass of matter. This mass of matter may be a liquid or a gas. The process of convection is especially important in the study of weather. If you understand the process of heating by convection, you can more easily understand wind movements.

Repeat when you hear *. Answer when you hear **.

Heat is transmitted by conduction, convection, and radiation. *

What are the three ways in which heat is transmitted? **

by conduction, convection, and radiation *

Heat is transmitted by conduction, convection, and radiation. *

by means of moving liquid or gas *

by means of moving liquid or gas *

Convection is transfer of heat by means of moving liquid or gas. *

Convection is transfer of heat by means of moving liquid or gas. *

What is convection? **

Convection is transfer of heat by means of moving liquid or gas. *

When air is heated it rises. *

What happens to air when it is heated? **

it rises *

When air is heated it rises. *

When water is heated it rises. *

What happens to water when it is heated? **

Water rises when it is heated. *

When a container of water is heated, the water level rises. *

convection current * convection current * convection current *

What is this movement of warm water called? **

a convection current *

This movement of warm water is called a convection current. *

When air is heated it rises. *

What does air do when it is heated? **

Air rises when it is heated. *

convection current * convection current *

This movement of warm air is called a convection current. *

What is a movement of warm air called? **

A movement of warm air is called a convection current. *

Listen.

Temperature is the degree of hotness or coldness measured on a certain scale. The instrument which is used to measure temperature is the thermometer. Temperature is usually measured by one of two scales – the centigrade scale or the Fahrenheit scale. The temperature at which water freezes is a reference point on both scales. Water freezes at zero degrees centigrade and 32 degrees Fahrenheit. The temperature at which water boils is another reference point. Water boils at 100 degrees centigrade or 212 degrees Fahrenheit.

Answer when you hear **. Give a complete answer. This time do not repeat the answer.

What instrument measures temperature?

**

The thermometer measures temperature.

Thermometers usually use one of two temperature scales. What are these two scales?

**

The two scales are the centigrade scale and the Fahrenheit scale. At what degree centigrade does water freeze?

**

Water freezes at zero degrees centigrade. At what temperature centigrade does water boil?

**

Water boils at 100 degrees centigrade. At what degree Fahrenheit does water boil?

**

Water boils at two hundred twelve degrees Fahrenheit. At what degree Fahrenheit does water freeze?

**

Water freezes at 32 degrees Fahrenheit.

Listen and answer.

In how many ways does heat travel?

**

Heat travels in three ways. What are these three ways?

**

Heat travels by conduction, convection, and radiation. By what means is the earth heated?

**

The earth is heated by radiation. If you stir hot coffee with a metal spoon, the spoon soon feels warm. What kind of heat transfer is this?

**

This type of heat transfer is called conduction.

Another type of heat transfer involves a moving mass of matter such as water or air.

What is the name of this type of heat transfer?

**

Convection. Convection is transfer of heat by means of a moving mass of matter.

2409B

Listen.

Two-word verbs are used very frequently in English. Usually two-word verbs consist of a verb plus a preposition. Two-word verbs are used idiomatically, and many times the meaning of the combination is difficult to find in the dictionary. Let's look at an example – PUT OUT. Put out means the same as EXTINGUISH. For example, we might say — “The fireman extinguished the fire.” or “The fireman PUT OUT the fire.” Two-word verbs are very important in English for two reasons. First, they are used very frequently and secondly, two-word verbs have idiomatic meanings and consequently are difficult to find in the dictionary. Let's practice some of the two-word verbs. LOOK OVER means to review or examine.

For example: “Did you examine the car?” “Did the mechanic examine the car?”
 “Yes, I looked over the car.” “Yes, he looked over the car.”

Listen to the following questions. Pay close attention to the forms of the verb – LOOK OVER and LOOKED OVER.

Answer the questions. Use one of these forms in your answer.

For example, you will hear the question: “Did you look over the car?” **
 You should answer: “Yes, I looked over the car.”

LOOK OVER * LOOKED OVER *
 LOOK OVER * LOOKED OVER *

Did you look over the car? **
 Yes, I looked over the car. *

Did he examine the car? **
 Yes, he looked over the car. *

Did he look over the book? **
 Yes, he looked over the book. *

Will you please look over the tires? **
 Yes, I will look over the tires. *

Did you look over the report? **
 Yes, I looked over the report. *

PICK OUT means to choose or select.

For example: “Did you choose a blue tie?” “Did you select a grey suit?”
 “Yes, I picked out a blue tie.” “Yes, I picked out a grey suit.”

Answer the following questions. Use PICK OUT or PICKED OUT in your answer. Repeat the correct answer.

PICK OUT	*	PICKED OUT	*
PICK OUT	*	PICKED OUT	*

Did you pick out a blue tie?	**
Yes, I picked out a blue tie.	*

Did you pick out a grey suit?	**
Yes, I picked out a grey suit.	*

Did he pick out a tape?	**
Yes, he picked out a tape.	*

Did she pick out a dress?	**
Yes, she picked out a dress.	*

Did you pick out the correct answer?	**
Yes, I picked out the correct answer.	*

TAKE UP means to discuss or introduce something.

For example, your instructor might say: "Tomorrow we will TAKE UP a new subject."

Answer the following questions. Use TAKE UP or TOOK UP in your answer.

TAKE UP	*	TOOK UP	*
TAKE UP	*	TOOK UP	*

Will we take up a new subject tomorrow?	**
Yes, we'll take up a new subject tomorrow.	*

Did you take up a new subject yesterday?	**
Yes, we took up a new subject yesterday.	*

Did he take up the subject of verbs?	**
Yes, he took up the subject of verbs.	*

Did they take up a new subject?	**
Yes, they took up a new subject.	*

Did he take up the subject of fuel?	**
Yes, he took up the subject of fuel.	*

TAKE OVER means to assume control.

For example: If the Commander is transferred, the Deputy Commander will TAKE OVER for a while.

Answer the following questions. Use TAKE OVER or TOOK OVER in your answer.

TAKE OVER	*	TOOK OVER	*
TAKE OVER	*	TOOK OVER	*

Did the operator take over the controls?	**
Yes, the operator took over the controls.	*

Did he take over the controls?	**
Yes, he took over the controls.	*

Did a new colonel take over the squadron?	**
Yes, a new colonel took over the squadron.	*

Will the new commander take over the school soon?	**
Yes, the new commander will take over the school soon.	*

Will you take over the controls?	**
Yes, I will take over the controls.	*

CARRY OUT means to completely accomplish something.

For example: When you receive military orders, you must CARRY OUT the orders.
 You must follow the orders.
 You must obey the orders.

Answer the following questions using CARRY OUT or CARRIED OUT in your answer.

CARRY OUT	*	CARRIED OUT	*
CARRY OUT	*	CARRIED OUT	*

Did he carry out the orders?	**
Yes, he carried out the orders.	*

Did they carry out the orders?	**
Yes, they carried out the orders.	*

Did you carry out the plans?	**
Yes, I carried out the plans.	*

Will he carry out the orders? **
Yes, he will carry out the orders. *

Will you carry out the orders? **
Yes, I will carry out the orders. *

CROSS OUT means to remove something by drawing a line through it.

For example: "He ~~CROSSED OUT~~ the misspelled word."

Answer the following questions using ~~CROSS OUT~~ or ~~CROSSED OUT~~.

~~CROSS OUT~~ * ~~CROSSED OUT~~ *
~~CROSS OUT~~ * ~~CROSSED OUT~~ *

Did he cross out the misspelled word? **
Yes, he crossed out the misspelled word. *

Did you cross out the incorrect answer? **
Yes, I crossed out the incorrect answer. *

Did he cross out the sentence? **
Yes, he crossed out the sentence. *

Will you please cross out this word? **
Yes, I will cross out this word. *

Will you please cross out my name? **
Yes, I will cross out your name. *

BRING UP means to introduce or present.

For example: Your instructor ~~BRINGS UP~~ new subjects every day.

Answer the following questions using ~~BRING UP~~ or ~~BROUGHT UP~~.

~~BRING UP~~ * ~~BROUGHT UP~~ *
~~BRING UP~~ * ~~BROUGHT UP~~ *

Do they bring up new subjects? **
Yes, they bring up new subjects. *

AMERICAN LANGUAGE COURSE

UNIT 2410

OUTLINE AND STUDY OBJECTIVES

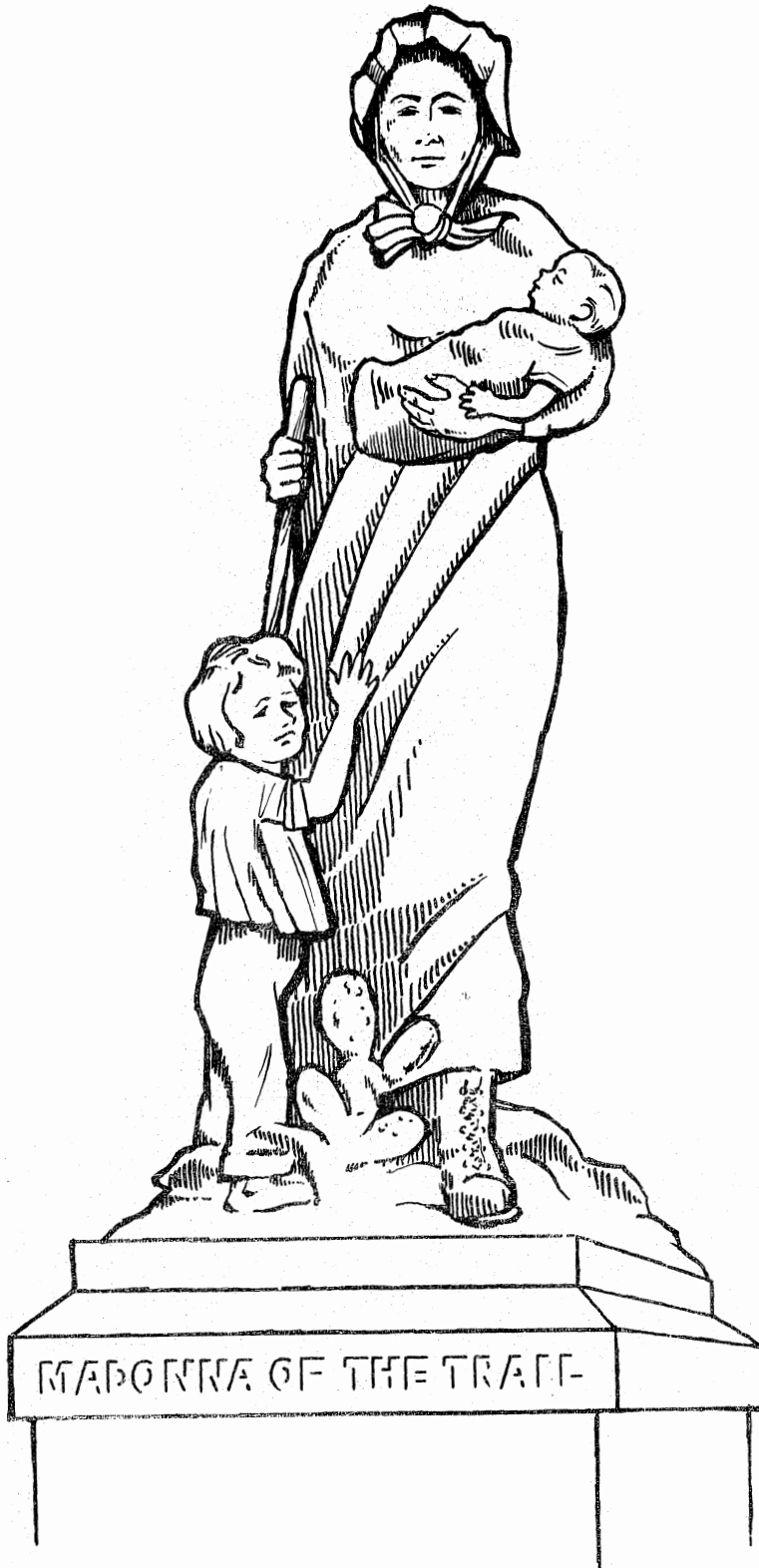
READING: EARLY AMERICANS

QUESTIONS ON THE READING

SPECIAL EXPRESSIONS

TAPE 2410A

TAPE 2410B



*A MONUMENT IN THE STATE OF KANSAS DEDICATED TO
THE MEMORY OF THE PIONEER WOMEN.*

UNIT 2410

READING

EARLY AMERICANS

Many early American heroes are mentioned on television and in movies. This often *de-emphasizes* (puts less stress on) the *role* (part) the American women played in developing the American frontier. Some people believe that the United States is what it is today because the women were willing to risk the same hardships as their men.

It is important to know that the early American settlers were colonists. There is a difference between an army and colonists or between explorers and colonists. A colonist goes to an area *to settle* (make a home) there. His wife and children go with him. A soldier or explorer will *eventually* (sooner or later) return to his homeland.

The American colonist came to the United States because he was dissatisfied with the living conditions in his homeland. He was independent in character and was willing to risk the hardships of a new land. Because of their previous experience, many of them had a basic mistrust of imposed authority. This caused them to move westward when they felt too crowded. They wanted the freedom and independence that the wilderness gave them.

A soldier or explorer can *undergo* (be subjected to) many hardships. A man with his family not only has to protect himself but has the responsibility for his wife and children. This responsibility was so great that quite often the wives had to share it with their husbands.

Women had to work almost as hard as their husbands. They worked from sunup to sundown. Practically everything they used had to be made by them. There were no stores, doctors, hospitals, or any kind of luxury. They had to make their own candles for lights and make their own soap in order to wash the clothes they had woven themselves. Practically every tool and utensil had to be handmade. Sometimes they had to *fight off* (repel) Indian raids. There are *numerous* (many) stories of women and children hiding for days in order to escape from enemies.

The country slowly became civilized because of these women. They united a man to both his home and family. Eventually the pioneer cabins became homes from which the man had less desire to move. Therefore, we can say that women did their part in developing the United States. Without their wives, men would have either returned to Europe or would have lived in a wildly unsettled *state* (condition). Because of their wives, they finally had to make homes out of their cabins. These homes eventually became cities.

QUESTIONS ON THE READING

1. What is a colonist?
2. What is the difference between explorers and colonists?

3. Why did the colonists come to the United States?
4. Why did they mistrust imposed authority?
5. Why was life extremely difficult for a pioneer woman?
6. What would be the differences between a country occupied by soldiers, explorers, and fortune hunters and a country occupied by colonists?
7. Would a modern woman be willing to follow her husband anywhere?

SPECIAL EXPRESSIONS

willing to = agree to

Examples: He is willing to come.
He agrees to come.

Are you willing to study for 5 years?
Do you agree to study for 5 years?

They are willing to cooperate.
They agree to cooperate.

eventually = sooner or later

Examples: The house will eventually be yours.
Sooner or later the house will be yours.

Eventually a person will pay for his errors.
Sooner or later, a person will pay for his errors.

to undergo = to be subjected to

Examples: John will undergo a series of examinations before being admitted into the university.
John will be subjected to a series of examinations before being admitted into the university.

Mother had to undergo a serious operation.
Mother was subjected to a serious operation.

fight off *repel*

Examples: They were fighting off a superior enemy.
 They were repelling a superior enemy.

 They fought off a mass attack.
 They repelled a mass attack.

numerous *many*

Examples: There are numerous kinds of cigarettes.
 We saw numerous airplanes at the airport.

 There are numerous ways to express a thought in English.
 Abraham Lincoln told numerous stories to explain his ideas.

emphasize (verb) *to stress; place importance*
emphasis (noun) *stress, importance*

Examples: They place much emphasis on physical fitness.
 They stress physical fitness.
 They think physical fitness is very important.

 The emphasis is on speaking rather than reading.
 They stress speaking rather than reading.
 They think speaking is more important than reading.

 Emphasis must be placed on self-discipline.
 Self-discipline must be stressed.
 Importance must be given to self-discipline.

 In this course we emphasize conversational English.
 We stress conversational English in this course.
 We think that conversational English is a most important thing in this course.

play a part in *participate in*

Examples: He played a big part in preparing this book.
 He prepared most of the book.

 Scientists play a big part in the defense of our country.
 Scientists are very important in the defense of our country.

 Overeating plays a big part in causing heart trouble.
 Overeating causes most heart trouble.
 Overeating is an important factor in the cause of heart trouble.

TAPE 2410A

Listen.

You will hear short paragraphs. Then you will be asked questions. Answer when you hear **
Repeat when you hear * Again, it is very important that you answer when you hear **

American settlers began moving westward in the early 17th century. They did not move fast at the beginning. First they had to learn the techniques required for a fast advance.

When did the settlers began moving westward? **
in the early 17th century *
They began in the early 17th century. *

Did they move fast at the beginning? **
No, they didn't. *
No, they did not move fast at the beginning. *

The region (New England) in which the settlers first landed is a forest region. They did not know how to live in this new land. They did not know which foods to eat, which animals to hunt, or which plants to grow. The settlers had to learn this before attempting to move westward.

Where did the settlers land? **
in a forest region *
The settlers landed in a forest region. *

Did they know which foods to eat? **
No, they didn't. *
No, they did not know which foods to eat. *

Did they know which plants to **
No, they didn't. *
No, they did not know which plants to grow. *

What did the settlers have to do before moving westward? **
They had to learn many things. *
They had to learn many things before moving westward. *

Most of the equipment the settlers brought from Europe was not suitable for the new world.

Thus the settler had to devise more suitable equipment. They had to make better wagons and discover suitable clothing for traveling long distances. They also had to develop better weapons and defense techniques.

Was most of the equipment that the settlers brought suitable for the new world? **
 No, most of it was not suitable. *
 No, most of the equipment was not suitable for the new world. *

What did the settlers have to learn? **
 They had to learn to make be *
 They had to learn to make more suitable clothing. *
 They had to learn to make be *

The migration across the United States followed a pretty orderly and standard pattern. The first people who went into the west were the hunters. They hunted animals for their fur. Fur was as valuable then as it is today.

Did migration across the United States follow an orderly pattern? **
 Yes, it had an orderly pattern. *
 Yes, migration across the United States followed an orderly pattern. *

Who were the first people to go into the west? **
 the hunters *
 The hunters were the first people to go into the west. *

Why did the hunters go into the west? **
 because fur was valuable *
 The hunters went into the west because fur was valuable. *

The miners usually followed the hunters. They usually wanted gold. Discoveries of gold deposits significantly increased the migration to the west.

What kind of people followed the hunters? **
 the miners *
 The miners followed the hunters. *

What did they usually want? **
 They wanted gold. *
 They usually wanted gold. *

What discoveries increased the migration to the west? **
 the gold deposits *
 Discoveries of gold deposits increased the migration to the west. *

The cattlemen followed the miners. They sought places where their cattle would have grass, water, and unfenced land. Cowboys kept themselves west of the civilized settlements. That is why we today associate cowboys with the west.

Why did the cattlemen follow the miners? **
 because they wanted grass, water and unfenced land *
 They followed the miners because they wanted grass, water, and unfenced land. *

Why is a cowboy associated with the west? **
 because he stayed west of the settlements *
 The cowboy is associated with the west because he stayed west of the settlements. *

The cowboy, miner, and hunter made little impression on the country. Nature was an obstacle to the farmers that followed. Forests and grass made planting difficult. The farmers cut trees, built houses, and gave the land a more civilized appearance. Often these first farmers sold their land to new industries and moved farther west.

Did a miner change the appearance of the land? **
 No, he didn't. *
 No, the miner did not change the appearance of the land. *

Why are forests and grass obstacles to a farmer? **
 because they make planting difficult *
 Forests and grass are obstacles to a farmer because he cannot plant. *

Why did the country look more civilized? **
 because the farmers built houses *
 The country looked more civilized because the farmers built houses. *

Once an area had many farms, the people usually established a community or town. Once there was a town, merchants would go west, and then craftsmen, lawyers, and doctors would follow.

What happened when farms would become numerous? **
 A community or town would be established. *
 When farms would become numerous a town would be established. *

When would merchants go to the west? **
 When towns were established. *
 Merchants would go west when towns were established. *

Who followed the merchants? **
 craftsmen, lawyers, and doctors *
 Craftsmen, lawyers, and doctors followed the merchants. *

In 1890, the government announced that there were no more unsettled western areas. There was no more frontier. All the land had towns and villages. This announcement closed a period of American history which had lasted approximately 300 years. The continuous migration to the west, a distinctive feature of the past, was over.

When was the settlement of the west completed? **
 in 1890 *
 The settlement of the west was completed in 1890. *

How long did it take to settle the west? **
 300 years *
 It took 300 years to settle the west. *

TAPE 2410B

You will hear short paragraphs. Be sure to listen carefully. There will be questions after each paragraph. Answer the questions when you hear **. If you do not listen carefully, you will not be able to answer when you hear **. Repeat when you hear *

We can trace some American characteristics to the influence of the west. For example, the American pioneer moved very often from place to place. When the west was settled, Americans didn't stop moving. Americans are still mobile. Very few live in the same place where their parents live. Most Americans are willing to move any place where they think they have better opportunities.

Did Americans stop moving when they could no longer move west? **

No, they didn't. *

No, they did not stop moving. *

Do Americans usually live in the city where they were born? **

No, they don't. *

No, they do not live in the city where they were born. *

Are Americans willing to move? **

Yes, they are. *

Yes, they are willing to move. *

Because the early colonist moved quite often, he left many of his possessions behind. He often burned his house in order to take the iron nails with him. He destroyed much that other people would save. This characteristic still seems to be with Americans. Many of them have to move quite often in their lifetime. They have to buy new homes before the old one is even paid for. Likewise, they trade cars frequently, not waiting for the car to fall apart. Today, like the pioneer, most Americans don't usually use an item until it is too old to use.

Did a pioneer carry all his possessions? **

No, he didn't. *

No, he did not carry all his possessions. *

No, he left many of his possessions behind. *

Why would he burn his home? **

in order to take the nails *

because he wanted the nails *

He burned his home because he wanted the nails. *

He burned his home in order to take the nails. *

Does an American always need a new car when he buys one? **
 No, he doesn't. *
 No, he doesn't always need a new car. *
 No, the old car is often still in good condition. *

Do Americans usually use an item until it's too old to use? **
 No, they don't. *
 No, they do not usually use an item until it's too old to use. *
 No, they usually trade it for a new one. *

You will now connect sentences. First, you will hear instructions; then you will hear two sentences. Repeat each sentence when you hear *. Connect the sentence when you hear **.

Connect the following two sentences with *because*.

The problems were unique. *
 They had to be solved locally. *

Now connect the sentences with *because* **

Because the problems were unique, they had to be solved locally. *

Connect with *although*.

Many had never studied democracy. *
 They practiced it every day. *

Connect with *although* **.

Although many had never studied democracy, they practiced it every day. *

Connect with *because*.

All men faced the same dangers and hardships. *
 All men were equal. *

Now connect with *because* **

Because all men faced the same dangers and hardships, all men were equal. *

Connect with *since*.

Americans think democratically. *
 They like to take part in government affairs. *

Now connect with *since* **

Since Americans think democratically, they like to take part in government affairs. *

Phrases or clauses usually sound the same even though they have different numbers of words. Listen carefully for the sound pattern. You will see that all the clauses or phrases have the same pattern.

for 300 years
the process of moving
in each generation
because they moved often
in the new societies
in many situations
under an Indian attack
in order to survive

These clauses and phrases can be placed in front or after a sentence.
Repeat when you hear *

For 300 years, American people moved westward. *
American people moved westward for 300 years. *

In each generation the process of moving was often repeated. *
The process of moving was often repeated in each generation *

Because they moved often, rigid social customs were forgotten. *
Rigid social customs were forgotten because they moved often *

In the new societies, a man was accepted for what he was. *
Man was accepted for what he was in the new societies. *

In many situations, privilege of birth and wealth was not important. *
Privilege of birth and wealth was not important in many situations. *

Under an Indian attack, a wealthy settler was no more important than a poor one. *
A wealthy settler was no more important than a poor one under an Indian attack. *

In order to survive, courage, intelligence and physical strength were of prime importance. *
Courage, intelligence and physical strength were of prime importance in order to survive. *

Practice with related words. Repeat when you hear *

comprehended *
He comprehended the situation. *

comprehended

realized *
He realized he needed only his own energy to succeed. *

realized

was aware	*	was aware	*
He was aware that the new land had abundant resources.			*
recognized	*	recognized	*
They recognized the importance of being left alone.			*
easy to understand	*	easy to understand	*
It is easy to understand that many problems cannot be solved locally.			*
understood	*	understood	*
It is understood that the government now takes a more positive social role.			*
acknowledged	*	acknowledged	*
However, it is acknowledged that Americans prefer to solve their problems locally.			*

Practice in passive and active constructions. Repeat when you hear *

Americans are a product of many countries.	*
Many countries produced the American.	*
Many ideas were started in other countries.	*
Other countries started many ideas.	*
Yet, the American was given some basic attitudes by the frontier.	*
Yet, the frontier gave the American some basic attitudes.	*
Some of the basic attitudes were discussed in this tape.	*
This tape discussed some basic attitudes.	*

WORD LIST

Following is an alphabetical list of Intermediate English terminology introduced in this student text. The number following the term indicates the page on which the term is used.

abundance	57	carry out	111	depth	82
abrupt	32	case	71	design (ed)	110
absorb	51	caution	32	desire	125
acid solution	58	cautious	70	determination	19
a close shave	97	chaplain	12	develop (ing)	26
acquire(d)	57	character	125	device	61
active	19	circuit	59	diminish	61
affect	30; 84	civilized	125	dirty	84
aim	19	clarify	18	dismount	69
allied	69	clear the area	71	disposed of	68
alert	71	cockpit	70	dissatisfied	125
altitude	46	compass	56'	drawn	70
amber	84	conclusion	29	drill(ed) (a well)	82
apply	32	concrete	45	duct	70
apply to	32	conduction	107		
area	125	constant	33	effect	44
artificial	95	container	45	electrical charge	57
assign(ed)	69	continent	82	electric shock	58
authorize(d)	71	continuous	44	electromagnet	59
average	33	controls	32	electron	58
awkward	32	convection	107	emergency fuel	
		convert (ed)	61	system	70
		convey (ed)	86	emit	94
		convince	21	emission	107
bar	107	crash helmet	71	emphasis	127
bar magnet	56	crosscheck	97	emphasize	18
behavior	44	cross out	111	energy	58
bit	57	crowd (ed)	125	enlisted man	12
boom	82	crucial	12	en route	71
brief	19	crude	82	equator	44
bring up	111	cubic feet	86	erratic	32
bulb (light)	95			essential	21
bumpy	12			eventual	125
by-products	84			exceed	32
				excess	58
				excessive	34
calm	44	danger zone	71	exercise (d)	68
candle	125	deaf	24	expel (led)	78
capable	32	de-emphasize	125	explorer	125
		demand (n)	82	explosion	68
		demonstrate	32		
		density	46		
		deposit	82		

express (ed)	110	impose	125	motivate (d)	25
extreme (ly)	80	in advance	71	motor scooter	71
		include	83	mount	69
		industrial	58		
fact	19	in mind	68		
fall apart	56	intake	70		
fatal	71	insecticide	83	natural gas	86
focus	20	item	68	navigator	56
frequently	32			needle	56
filament	95			negative charge	57
firing range	71	jerk (ing) (y)	32	nervous	32
flashlight	95	jot down	19	north pole	56
flight line	78	jump to conclusion	103	northwestern	3
for instance	107			notice	32
frighten	14			numerous	32
fuel	69				
furnish	107	keep an eye on	97	object	57
		keep out	71	observe	32
		kerosene	82	oil field	82
		kill (ed)	58	oil line	84
				oil tank	84
gaseous	44			on account of	77
generator	58	lane	32	on the blink	97
gentle pressure	32	landing strip	78	organize	20
get by with	97	lecture	107	organization	20
get on with	97	level	46	overturn	71
glow	95	limited	20		
goal	20	locate	20	part (to play a	
go along with	97	look over	111	in)	127
grades of	83	loosen	45	passive	19
greenish-brown	84	luxury	125	pass on	111
				pattern	2
				personnel	71
handle	32	magnetic poles	57	petroleum	82
hangar	78	magnet	56	pick out	22
hardship	125	maintain	20	piles	69
have had it	84	make use of	83	pipe	57
head (ing)	12	man-made	95	plastic	83
high voltage line	58	marine (adj)	83	portable	58
horizontal	60	mark (ed)	6	portion	107
household	83	mass	107	positive charge	57
housekeeping	69	match (n)	95	practically	125
		medium	33	precaution	69
		mistrust	125	pressed for time	102
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ignore	27	motion	44	pressure surge	33
illegal	69				

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 reciprocating (engine) 83
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 repulsion 56
 risk 125
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safety belt 71
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share (v) 125
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 suppose (d) 70
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 take apart 69
 take over 111
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 tank 57
 tank selector switch 70
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 tense 32
 the hard way 71
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 think it over 68
 thin (ness) 84

throttle 70
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 to the rear of 71
 transfer 57
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undergo 125
 underline 18
 uneven 107
 unite 51
 up to you 84
 upwind current 12

vacuum 47
 variation 44
 vicinity 71
 viewpoint 24
 viscosity 84
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 well (n) 82
 wilderness 125
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 windshield 36
 wind up 84
 work it out 84
 woven 125
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