

CLASS INSTRUCTORS HANDBOOK

The Class Instructor's Handbook is designed to provide a foundation for an instructor on which to build a knowledge and experience in classes. This material is shared because it contains the best known and proven methods of planning classes. As you gain experience you will want to add your personal notes to this handbook. It is a handbook, not a syllabus or manual. It is for your use only. We trust that you will come to treasure this handbook as you continue to add to it and watch it grow as your understanding grows in the masterful art of planning classes.

This handbook is designed to supplement the various Class Instructor's Guides. Only those people involved in the Class Instructor's Conferences will receive a handbook.

I. PRE-CLASS ACTIVITIES

A. Public Explanation

1. The Public Explanation is a tool to overcome objections to the Power For Abundant Living class. It is not a time to make the "closing" on a class registration; this should be done on a one-to-one basis by the grads after the meeting. The basic objectives of the Public Explanation are:
 - a. to give accreditation to the ministry.
 - b. to overcome the two basic objections to the class --TIME & MONEY.
 - c. to motivate people to make a decision

B. Registration/Orientation

This night is mainly designed for those who have decided to be in the class and perhaps a few others who need a little more "convincing." This type of meeting is designed to finalize the class by: Presenting the class and how it will help them, explaining details of how the class will be run (schedule, requirements, etc.) and building enthusiasm and goals for the class. This night should be the registration deadline for the class.

- C. The Class Party is primarily for the new students and selected grads and is presented in a more relaxed atmosphere. An understanding and excitement for the class is built within the students. New students also have the opportunity to become familiar with each other and the class instructor. By covering every detail of the class

with the students at the Class Party, you will be able to run a smoother class.

D. Grad Party

1. The purpose of the Grad Party is to unify the grads in a local area and to communicate the importance of the upcoming PFAL class; specifically, their individual responsibilities concerning the class.

E. Mock Set-Up

1. The Mock Set-up is designed to teach the crew that will be working with the Class Instructor all the physical details necessary for a smooth class. It is best to do this several days before the class (usually on afternoon of the day of the Grad Party).

II. PRE-CLASS PLANNING

A. The Pre-Class Planning sets the entire foundation for every class. There are basically four types of people who need to be prepared for the class:

1. Instructor (and Assistant)
2. New Students (via Registration/Orientation Night, Class Party, Public Explanation, etc.)
3. Grads (via Grad Party)
4. Crew (via Mock Set-up)

B. Pre-Class Planning should start six weeks before the class.

1. Six weeks before class begins, the minimum number of students should be fully registered. The Class Instructor and Assistant should begin thinking through location for class, crew members, class party, etc. All Pre-class activities should be weighed according to the needs of that particular class before being established.
2. If a Public Explanation is planned, it will take time to arrange all details and publicity far enough in advance for people to attend.
3. Registration deadlines should only be set after a minimum number of students have been fully registered. The deadline is not for these

students, but for those who still need encouragement. We should always work for maximums in our classes. It is not necessary to determine whether a class will be video, tape, or film before the registration deadline.

4. Two to three weeks should be allowed between the registration deadline and the first night of the class. You will need this much time to properly prepare for the class.
 - a. If you plan a Class Party, you will need to invite the new students as early as possible, send calendar and directions, select grads, assign responsibilities, etc.
 - b. If you have a Grad Party, you will need to publicize location, date, time, etc. to all local grads.
 - c. When you plan to do your Mock Set-up, you will need to have all arrangements well thought out as far as crew, necessary equipment, etc. Be sure you have EVERYTHING at the Mock Set-up.
 - d. Get your personal affairs in order so that all obstacles are eliminated. This class will need your undivided attention and loyalty.
 - e. As the chart on page 4 illustrates, one class can be in the planning stage while another is in process. It is available to hold registrations over until your next class if people want to register after the deadline has been established.

III. EXPLANATIONS OF PRE-CLASS ACTIVITIES

?A. Public Explanation

1. The Public Explanation is a tool to overcome objections to the Power For Abundant Living class. It is not a time to make the "closing" on a class registration; this should be done on a one-to-one basis by the grads after the meeting. The basic objectives of the Public Explanation are:
 - a. To give accreditation to the ministry
 - b. To overcome the two basic objections to the class --TIME & MONEY
 - c. To motivate people to make a decision
2. Be certain everything is best as far as the physical set-up is concerned. This will be the first time many will view The Way ministry. Have your helpers sharply dressed and spiritually on top of every detail. Have film or video equipment fully checked out. Place PFAL regis-

PRE-CLASS PLANNING CHART

FIRST CLASS

Weeks
Before

6	Minimum number of 7 students for class
5	
4	Public Explanation
3	Deadline - Registration/Orientation
2	
1	Class party, Grad party, Mock set-up
	Class starts, 1st week
	Class, 2nd week
	Class, 3rd week

The Public Explanation, Registration/Orientation, Class party, Grad party, Mock set-up are listed to show the necessary time allowance. Your pre-class planning schedule may look different according to what activities you use to meet the needs of your new students.

SECOND CLASS

Weeks
Before

6	Minimum number 7 students for class
5	
4	Public Explanation
3	Deadline - Registration/Orientation
2	
1	Class party, Grad party, Mock set-up
	Class starts, 1st week
	Class, 2nd week
	Class, 3rd week

The six weeks planning time starts over because there are seven ready for the second class. Notice that this is going on while the first class is running.

THIRD CLASS

Weeks
Before

6	Minimum number of 7 students for class
5	
4	Public Explanation
3	Deadline - Registration/Orientation
2	
1	Class party, Grad party, Mock set-up
	Class starts, 1st week
	Class, 2nd week
	Class, 3rd week

Within 2-3 weeks you may have another seven people ready to go so you start the planning period again.

tration cards on every chair. Have materials for the class on display as well as The Way International brochures, This Is The Way and Power For Abundant Living. If you plan to show The Abundant Life film or videocassette, be certain to have The Abundant Life brochures available.

3. The Public Explanation is best divided into four parts:
 - a. Establish need and show what is available
 - b. Discuss back of PFAL card
 - c. Introduce and show segment #1 of PFAL
 - d. Obviate, motivate, close

The best success we have had is with one person conducting the entire Public Explanation. However, if three people are used; one would cover part (a) and introduce the second speaker in enough depth that the people in the audience would feel that they know him (30-60 seconds at the most), the second speaker would handle parts (b) and (c) and after the class segment would introduce the third speaker who would handle part (d).

4. What exactly is covered in each part?
 - a. Establish need and show what is available. A good example is if you were to walk down the streets of your community and were to ask 100 people at random what they wanted to get out of life, what they wanted to accomplish, you would probably get answers like "happiness, peace, meaning and purpose." Unfortunately, if you were able to follow these same 100 people down the road of life from the time they were 18 years of age until they were 65, I would challenge you to find five out of those 100 people who could honestly say that they had accomplished all they set out to do in life.

What does The Way ministry have to offer?
The accuracy of the Word of God and the practical keys to operating those principles of God's Word in life's everyday situations.

Who is the teacher?
What was his quest? Why did he turn to the Word as the only rule of faith and practice?
What exactly is this class on Power For

Abundant Living?

- b. Discuss back of PFAL card.
Explain that the benefits listed are only a sampling of what many grads have reported. Take each benefit and read it to them. You will want to work perhaps three in detail, using the "power of the incident." Always tend to understate these benefits so that the people will build them up in their own minds. Occasionally, it might be good to use a third party as an example rather than always relating personal incidents.
- c. Introduce and show segment #1 of PFAL.
Explain that Dr. Wierwille is going to illustrate just one principle from God's Word that we can begin to apply in our lives, then roll the film or videocassette. NEVER come back up in front of the group after the PFAL segment and say, "Wasn't that great?" A good way to handle the close of the PFAL segment is to come back up in front of the group and say: "You know, it slipped my mind, but I should have mentioned something about the class before the segment began... you know, _____ told me one time that the PFAL class has enabled him to become the person he had always wanted to become." This gets a good emotional response; most people operate by emotions first, then logic.

Perhaps emphasize the principle of knowing "what is available" by saying: "I'm sure many of you never considered God as a bank, where you can draw on what you know is available." Emphasize that this is perhaps a new concept they have never heard before.

- d. Obviate, Motivate, Close
(1) Obviate the great objections - Time, Money. If you do not want an objection to come up, then you bring it up first. This is obviating an objection.

You can be proud of the fact that we require a minimum required donation of \$85.
Emphasize that people only get out of something what they put in it.

You can shift the objection from money to time. Explain that money is something that can always be replaced, that there is always a way to recover any money spent; but, on the other hand, time is something that can never be replaced.

Our real concern should be time. Once you have invested time, you cannot replace it. A person has to decide what he wants out of his investment of time. Many spend years at college seeking an education and perhaps answers to life's questions. Do people really get what they want out of a college education?

Just suppose, however, that this class could do it for you - teach you how to obtain that quality of life you have been searching for, that hope you have always held dear, that fulfillment of your fondest dreams you have been seeking. Just perhaps, this 36 hours could be the wisest investment of your entire life.

- (2) **Motivate** - show them, utilize both sides of the story.

The Mirror Example - Have them picture themselves 5, 10, 15 years down the road of life, getting up in the morning and looking into their mirror and seeing the same fears, worries, doubts, the same unanswered questions and dreams as they have this night. Have them see themselves thinking back to this night where they had a chance to make a decision to take a class that might have changed their lives. On the other hand, have them picture themselves 5, 10, 15 years down the road of life, getting up in the morning and looking into that same mirror. But, this time, instead of seeing doubts and worries, they see an excitement and a zeal for life, a great anticipation for a great and wonderful day in which to live, a real feeling of confidence and joy. Have them see themselves thinking back to this night where they had a chance to make a decision to take a class that might change their lives and they made that decision.

Other Examples: *

The "Acres of Diamonds" story

The "Old Shoes" story

Others - (Check books, live sales presentations, etc. where an incident motivator is used)

(3) Close

By now, you really have them on the brink of making a decision. You should explain that there are classes scheduled --give time and place and registration deadlines. To night's the night to make that decision.

Then, STOP. Say, "Good night, God bless you," or whatever.

After this, your grads should immediately get with new people to get the cards signed. You will already have instructed them not to go up and say "Boy wasn't that great," etc.; but, something like "Your pen or mine?" or "Will you be able to put down your payment tonight by cash or check?" Of course the grads will have to walk with wisdom and not appear cold or impersonal.

An example of one method your grads could use in working with people after the explanation is the Ben Franklin method. Have them take a piece of paper and draw a vertical line down the center. Explain that Ben Franklin, whenever he was confronted with a decision, would take a piece of paper and draw a vertical line down the center. On one side he would list the "pros" and on the other the "cons." Have them list the "pros" you have been discussing. Then have them write their own "cons." The decision will, of course, be weighted toward the positive. They will have reached their own decision.

We have had wonderful results with this Public Explanation when the leader (and it is best to have someone other than the instructor of the class) has dreamed it and really worked it with personal worked it with personal incidents that have a real "heartbeat."

*Check the tape on Public Explanations. Also Acres of Diamonds is available in paperback form.

B. Registration/Orientation

This night is mainly designed for those who have decided to be in the class and perhaps a few others who need a little more "convincing." This type of meeting is designed to finalize the class by: presenting the class

and how it will help them, explaining details of how the class will be run (schedule, requirements, etc.) and building enthusiasm and goals for the class. This night should be the registration deadline for the class.

This fellowship would be held at the same location as the class itself. The Class Instructor and all Assistants should attend. The physical set-up should be the same as the class. You should have a booktable, refreshment table, name tags, etc. You may want to show segment one of Power For Abundant Living or The Abundant Life.

✓c. The Class Party is primarily for the new students and selected grads and is presented in a more relaxed atmosphere. An understanding and excitement for the class is built within the students. New students also have the opportunity to become familiar with each other and the class instructor. By covering every detail of the class with the students at the Class Party, you will be able to run a smoother class.

1. The purpose of the Class Party is to acquaint the new students with each other and the Class Instructor as well as Assistants working with the class.
2. Generally, only the new students plus the Class Instructor, Assistant, Branch or Area Leader and their spouses will be present. Occasionally, the Limb Leader and his wife may want to attend a Class Party. You should have a maximum of four to six grads, so that the new students greatly outnumber the grads. Again, it is best to hold this affair at the same location as the class, if the classroom is in a home. However, if the class is in a rented room, use a nice home. Unlike the Registration/Orientation night, this is a party with a more casual and relaxed atmosphere.
3. The Class Party should be scheduled five to seven days before the class begins. This allows enough time for students to learn the books of the Bible before the class; it allows time to schedule rides and time to properly coordinate babysitting and it also allows the excitement of the Class Party to carry over into the first night of the class.

The Class Party is an hors d'oeuvres party:

- a. 2-3 kinds of sliced meats and cheese
- b. Party bread or crackers
- c. Pickles, olives, relishes, dips
- d. Hot drinks and cold drinks

A picnic or other type of party could work; however, keep in mind that we want our people to get to know each other. Keep cost in line.

5. Other supplies and preparation before the Class Party:
 - a. Name tags to be worn during class
 - b. Registration cards
 - c. Ministry music in background
 - d. Handwritten invitations (with phone call follow-up) including location, date, time, map, style of dress, explanation of evening, etc.
6. Make everyone feel welcome
 - a. Welcome students as they arrive
 - b. Pin on name tag personally
 - c. Introduce the guests to each other
 - d. After all have arrived, explain the evening schedule. Have a word of prayer and start them around the hors d'oeuvres table.
7. All grads should be sure that they talk to all students in the room. Do as much trouble shooting as possible. Keep people mingling by mingling yourself. (Note: You can guarantee mingling by having fewer chairs than people at the beginning.) Allow enough time for the grads to talk to all the new students, then graciously begin the meeting.
8. During the meeting, cover the following:
 - a. Registration card agreement
 - b. Schedule
 - c. King James Bible
 - d. Notes
 - e. Introduction of class personnel (if not already done)
 - f. Books of the Bible (explain the importance of memorizing)

Be sure that all students have definite goals and objectives for the class and that they are convinced in their own hearts that they are sincerely seeking an accurate knowledge of the Word of God and desire to operate the power of God in their lives. Perhaps share a few verses that will build a real excitement and enthusiasm for the class. Close the meeting on a "high note."

D. Grad Party

1. The purpose of the Grad Party is to unify the grads in a local area and to communicate the

importance of the upcoming PFAL class; specifically, their individual responsibilities concerning the class. As many grads as possible should be present and made knowledgeable of all necessary details. Although grads are only one of the four groups involved in any class, their importance is immeasurable. They are the ones already operating the principles taught in the class and should be an asset to the Class Instructor. The Grad Party will encourage the grads tremendously.

2. The Grad Party should be held at the class location after the Class Party so results of Class Party can be shared. It is also good to hold the Mock Set-up in the afternoon before the Grad Party so all details will have been covered. Usually, there will be enough refreshments left over from the Class Party to supply the need. You want more than just cookies and coffee to really set the mood. You will also need to have Class Repeat Cards available to cover with the grads. The party should begin at 7:00 p.m.
3. Cordially welcome everyone. After everyone has arrived, move right into the refreshments. Start the meeting as soon as everyone has served himself. Explain the importance of the grad's role in the class:
 - a. New students have never been to a PFAL class before. Grads are the example; new students will imitate the grads in every action. New students will soon be grads and be setting the example for future classes.
 - b. Whenever you cover any point, always start with ... "as examples or as pace-setters" ...
 - c. Share the importance of the grad's role in the class, but keep this meeting light and mellow. Although some may take it as such, this is not a big "reproving" session.
4. Share the following with the grads:
 - a. Cover details of the Class Party - how students were blessed.
 - b. Students should arrive 15 minutes early to every session, grads --20 minutes.
 - c. Cover the importance of being involved with the class and being spiritually sharp (staying awake, not talking, respecting the Class Instructor, participating when Dr. Wierwille asks for participation, staying in seats during class, etc.)
 - d. Instruct the grads not to answer questions or try to teach the class on their own. (i.e., Do not lead students into tongues)

before last session without consulting Class Instructor; grads do not leave their chairs when students are lead into manifestation; etc.)

- e. Think through those things you have seen other grads do in past classes that were not best. Cover every one with these particular grads.
5. Grads who are honestly repeating the class for credit should:
 - a. Do homework assignments
 - b. Listen attentively
 - c. Write down their needs before the class and watch how the class answers their questions.
 - d. Fill out Class Repeat Cards and attend sessions faithfully.
 6. Handle undershepherding responsibilities with the grads. Tell the grads about each student: occupation, who first witnessed to that student, special needs, etc. Tell grads to be sure to walk with wisdom in talking to students. No student's questions are to be answered. If a student asks a grad a question, the grad should refer to the class or class material. Negative conversations should always be steered back to the Word. Grads should speak in tongues during the class. Grads should be sure every student does not have to stand alone; all students should have someone on whom they can lean until they can walk on their own. You may need to make undershepherding assignments.

Close the meeting by sharing those things that will really excite and bless the grads. Tell them how much you appreciate their faithful stands on God's Word and the help they will render during this class.

E. ~~Mock Set-Up~~

1. The Mock Set-up is designed to teach the crew that will be working with the Class Instructor all the physical details necessary for a smooth class. It is best to do this several days before the class (usually on afternoon of the day of the Grad Party). You will never be quiet on the inside, spiritually, unless all physical details are right; you will always be compensating for weak points otherwise.

God expects you to take care of all physical

details. If you miss on the physical end of the class, you will miss on the spiritual as well. Teach the crew thoroughly and then start them to work. Generally the assistant to the Class Instructor will coordinate all activities of the crew.

2. Be sure to train your crew well --cover every eventuality. Once you have a well-trained crew, you can share the great "heartbeat" of that particular class and the real spiritual side of running a class. If a crew learns to recognize the heartbeat the entire crew will always be sharp.
 - a. Write out each crew member's responsibilities on a card with a time schedule. Do not just tell him what to do, but how to do it.
 - b. Explain that they are literally responsible to God for their share of the work. Go over individual responsibilities with the whole group so everyone will know everyone else's responsibilities as well as his own.
 - c. Remember, different people need different types of motivation. Walk in love.
 - d. Delegate all the physical work so that you, as Class Instructor, can be free to be spiritually on top of every student's life.
 - e. The physical set-up for each session should be completed and all members of the crew ready a minimum of one hour before the session begins. You may want to have a believers' meeting before each session.
 - f. Meet with your crew before and after each session. Work as a mighty team. Watch over each other and, as a group, be sure every detail is covered.

3. Registration should be handled with tremendous care because this will make a great impression on the new students. Registration personnel will often be a student's first contact with the class. All registration personnel should dress nicely, write nicely, and smile very lovingly. Name tags should all be done in one person's handwriting and large enough to be read from 30-40 feet. You may want to color code your name tags (green for grads, blue for students, red for crew, etc.) according to what your Limb has previously decided.
 - a. Name tags should be neatly displayed.
 - b. Someone should greet each student, pin on

- his name tag, and escort him to the proper seat.
- c. If heavy coats are worn, provisions will have to be made to hang up coats.
 - d. One of the registration personnel should handle Class Repeat Cards for grad attendance.
 - e. Registration personnel are responsible for all name tags for students, grads, and crew.
 - f. Decisions will need to be made during the Mock Set-up concerning tablecloth and poster for registration table, materials for making name tags, flowers, decorations, etc.
4. Refreshments are very important to a PFAL class. We are instilling a pattern of orderliness and blessing for the new students and grads to follow. Refreshments should be well thought through and ready before the class--out of sight, but ready. Personnel should sit where they will not disturb the class when they prepare the refreshments. Every effort must be made to prepare and clean the refreshment table so as never to disturb the teaching.
- a. Decide exactly what refreshments will be served, when they will be served, and why they will be served. Special foods may be used to illustrate a particular principle.
 - b. Encourage grads to donate refreshments, but coordinate things so you don't have eight dozen cookies for a class of seven students. Often students may want to share also.
 - c. Suggested time table
 - (1) One hour before class:
Food, refreshments ready on platters, coffee perked (grounds removed), sugar, milk in containers. Everything should be ready but out of sight.
 - (2) One half hour before break:
Unplug coffee pot so coffee won't be too hot during break.
 - (3) Ten minutes before break:
Start arranging the table. Pour the cold drinks.
 - (4) One minute before break:
Pour hot coffee, be sure students are not distracted.
 - (5) During the break:
Stay close to meet any needs of students and grads.
 - (6) At close of break:
Refreshment personnel should start cleaning up and putting things away two minutes before break is over. By

the time students and grads return to their seats, everything should be cleared away and out of sight.

5. Cover all the physical aspects of the class with the crew. Use the checklist in the Class Instructor's Guide: chair arrangement, lighting, cleanliness, posters, parking, etc.
6. You should assign one person to be a technical engineer. He would not need to be an expert, but needs to be knowledgeable of and confident with the equipment.
 - a. Check tapes to see if they are the correct segments.
 - b. Check all wiring
 - c. Cue all tapes
 - d. Check television for picture and sound.
 - e. Never leave any piece of equipment without a responsible person in charge during a break, before, or after the class, or during it's operation.
 - f. Be sure equipment is in a safe place where no one will tamper with it.

A Bookstore display should always be set up at meetings and classes.

DISPLAY

All class registration cards
Bookstore catalog, order forms and return envelopes
Current magazine and subscription order forms
Flyers: The Abundant Life, P.F.A.L. and This is The Way
Pens for writing
Tape order forms for auto tapes

FOR AREAS WITHOUT A WAY BOOKSTORE: You should have a table set up with the above items on display AND a copy of your own personal Way books pertaining to the class in process. The person in charge should be sharp, alert and knowledgeable of Way materials to be of help to the people.

FOR AREAS WITH A WAY BOOKSTORE: Refer to your Bookstore Manual. The key point to remember is to select the right books for the class in process.

EQUIPMENT

AUDIO TAPE EQUIPMENT

I. Physical Set-up

A. Sound

1. Basic controls are volume, base and treble. In lengthy listening sessions, "listening fatigue" can be reduced significantly by increasing both treble and bass and dropping volume to a comfortable level.
 - a. Bass--low range, resonant frequencies
 - b. Treble--mid-range, high range, highest range
2. Mid-range frequencies are very stimulating and effective over a public speaking system. High range frequencies give "presence" to the speaker (clarity, realism and quality). Highest-range frequencies give a brilliant quality to the speaker. You can tell the lower-range frequencies by the resonant sounds, the higher-range frequencies by the "S's".
3. Having both the lower-range and higher-range frequencies will keep the "ear" awake. If your bass and treble controls are on the same knob, it is best to have it set a bit more on treble than bass.

B. Speakers

1. Positioning of the speakers is the easiest way to keep the volume at a comfortable level.
 - a. Speakers should be off the floor at about "eye level", so that the front row does not absorb all of the sound.
 - b. If you set up two speakers, check every seat to be sure the sound does not cancel out itself. Otherwise, you will have what is called "a sound spot."

C. Wiring

1. Wiring is a very important aspect of setting up tape equipment. All wires should be taped down. It is best to keep wires off the floor. (Put wires around door jams instead of across door bases so people will not trip on or loosen wires.)

II. Maintenance

A. Tools and Repairs Kit

1. Small Phillips screwdriver
2. Small regular screwdriver
3. Needle-nose pliers
4. Magnetic tape demagnetizer
5. Tape Head Cleaner (or 70% isopropyl alcohol)
6. Q-tips
7. Soft clean rag
8. Electrical tape (for wire splicing if necessary)

B. Cleaning

1. The primary cause of any trouble in a tape recorder is dirt. The polyester tape itself leaves the greatest amount of dirt or residue on the tape recorder.
2. Use head cleaner or 70% isopropyl alcohol to clean your heads and other metal parts of the tape recorder. (Watch if you have plastic parts to your tape recorder. Some head cleaners will damage plastic.) If you absolutely can not use head cleaner or isopropyl alcohol, you can use rubbing alcohol.
 - a. Pressure pads inside the tape recorder may become encrusted or worn. If so, they should be replaced. If they are just dirty, gently roughen them with a knife or nail file and a bit of head cleaner. Be sure not to touch the heads with the knife or file.
 - b. Clean everywhere the tape touches. This will include the automatic turn-off mechanism, tape guides, heads, capstan and rubber roller.
 - c. To clean the heads, gently rub them with a Q-tip that has been dipped in head cleaner or alcohol in the same direction as the tape path. Gently rub until you get no more residue on your Q-tip. HEADS SHOULD BE CLEANED EVERY THREE HOURS OF PLAYING TIME.

C. Demagnetizing

1. A good demagnetizer only costs between four and five dollars. You should have one.
2. Be sure the metal end of the demagnetizer is covered by adhesive or electrical tape unless already covered with plastic.
3. Operation:
 - a. Most demagnetizers are in operation once they are plugged in. Be sure all tapes, watches, etc. are in another room.
 - b. Start the demagnetizer several feet away and bring it to within $\frac{1}{2}$ " of the heads for 3-5 seconds and then pull it away. Keep all of your movements smooth and not jerky.
4. Tape recorder heads should be demagnetized once every class. If a residual magnetism is allowed to build up, it may cause the following:
 - a. erasure of the highest frequencies
 - b. a recorded hiss on the tape

III. Handling Principles

A. Tape Recorders

1. Keep the instruction manual that comes with the tape recorder and master it.
2. Save the box that the tape recorder comes in and pack the recorder in the same box whenever transporting it.

3. Always take good care of plugs and cords. Pull the plug out of tape recorder or wall by the plug itself and not the cord. Fold up cords in the same way as the manufacturer.
4. Allow the fan to have freedom of air passage during operation.
5. Every extra effort you make will maintain the life of your equipment. Always avoid rough handling.

B. Tape

1. Always store tapes on edge in the same boxes in which they came.
2. If you have tapes that have not been played for six months or so, fast forward and rewind before playing. This will avoid sticking.
3. Watch temperatures. Temperatures over 120° fahrenheit will cause bleed through. If tapes have been left in the heat, you should wait 16 hours before playing. This allows tapes to return to room temperature. Keep tapes at room temperature. Do not leave in your car, etc.
4. Accidental erasure of tapes can occur by allowing tapes to be too close to big motors, train sets, refrigerators, etc.

IV. Repairs You Can Do

1. Replacement of tape guides, pressure rollers and pressure pads is easily performed.
2. If you do need to see a repairman, see an authorized dealer for your particular brand of tape recorder, if possible.

V. Trouble-Shooting

1. "Chirping or squeaking" sounds or vibrations
 - a. defective pressure pads--clean and roughen
 - b. accumulation of dust and dirt--clean
2. Erratic response (tape cuts on or off)
 - a. incorrect tape tension or loss of intimate contact between tape and heads--take to authorized repairman
3. "Wow or flutter" (objectionable variations in sound pitch)
 - a. dirt on capstan--clean
 - b. dent on pressure roller (caused by leaving machine in "play" position without tape running through machine)--replace pressure roller.
4. Other

*Tapes mmistry uses are always mono & half track
 if get back sound turn down right control. Don't need
 stereo*

*Wollensak
 very good*

I. Basic Color Television

A. Best Brands

1. Sony Trinitron is the best available. It is used in all major studios.
2. Zenith is noted for its Chromacolor Luminescence. (Solid state)
3. RCA is noted for its natural color. (Solid state)

B. Basic Controls (It is important for you to know controls to correct any malfunctions.)

1. On/off switch and volume
2. Channel Selector
 - a. Sony uses either channel 3 or 4
 - b. Concord uses either channel 5 or 6
 - c. Whatever channel setting is selected on the back of video playback unit must be the same on the television channel selector.
 - d. Always use whichever channel is not used by a local station or it may interfere with your video playback.
3. Fine-tuning (usually located around the channel selector)
 - a. Works in conjunction with your television's Automatic Fine Tuning (AFT) system.
 - b. Disengage the AFT button, adjust the fine-tuning control for the best picture, and then reactivate the AFT button.
4. Brightness and Contrast
 - a. Brightness and contrast should be adjusted with the color control off... (with a black and white picture).
 - b. Adjust these controls to get the sharpest black and white picture. Look for details such as lapels on a man's coat, lettering on a sign.
5. Color
 - a. After you have the sharpest black and white picture, adjust the color. Be conservative on color adjustment; keep colors light and natural. Strive for natural flesh tones.
6. Tint or Hue
 - a. Adjust to natural colors, especially flesh tones.
7. Horizontal Hold
 - a. Horizontal hold will stabilize the picture without a tendency to lean at the top.
 - b. Sony has a built-in horizontal hold.
8. Vertical Hold
 - a. Vertical hold keeps the picture from rolling.
9. Focus
 - a. The focus control is on the back of most sets and is best operated with a black and white picture.

- b. Most television sets are out of focus. Consider this if your picture does not seem clear.
10. Other Color Adjustments (Back of set)
- a. The color adjustments on the back of the set should only be touched by an experienced person and then only after all other controls have been tried.
 - b. If you do make adjustments, allow several hours to do the job correctly.

C. Connections used with Video playback

- 1. Video Power Cord (needs 3-prong adapter)
- 2. Antenna Connections (top rear of most televisions)
 - a. UHF (Ultra High Frequency) includes channels 14-83. UHF is not used for video playback, UHF is usually located above the VHF connections on the back of the set.
 - b. VHF (Very High Frequency) includes channels 2 through 13. VHF is used for video playback. The proper title for this connection is the VHF 300ohm antenna connection.
 - 1. The VHF connection is a two-screw connection and requires a matching transformer to receive the co-axial cable connection (75ohm) from the video playback unit.
 - 2. The matching transformer converts the 75ohm output of the video playback unit to the 300 ohm input on the television set.
 - c. Some newer sets have a 75ohm screw-on type of input in addition to the VHF 300ohm input. With this input, the 75ohm co-axial cable can be directly connected to the set without a matching transformer. If there is an "external by-pass jumper" on the 75ohm input, it must be removed before the co-axial cable can be connected. Always use the 75ohm input, if possible. Never try to use both.

D. Operation of television during video playback

- 1. Be sure power cords for television and playback unit are plugged in.
- 2. Connect your co-axial cable from the video playback unit to the antenna connections on your television. (Either connect directly into 75ohm screw-on input or through matching transformer into 300ohm VHF input)
- 3. Select the proper channel. (Sony - 3 or 4; Concord 5 or 6).
- 4. Turn on video playback unit, insert video cassette and engage the play button.
- 5. Turn on television set and adjust volume.
- 6. Disengage AFT control and adjust fine tuning for the sharpest picture. Then reactivate AFT control.

7. Turn off color control and adjust brightness and contrast for sharpest black and white picture.
8. Add just enough color and hue to get the most natural color and flesh tones.
9. Adjust vertical hold if picture rolls.
10. Adjust horizontal hold if top of picture leans.
11. Reset circuit breaker in back of set if you have no picture at all. See instructions on the back of your set. Rough handling and over heating may deactivate the circuit breaker. If circuit breaker will not stay activated, you must have the set repaired by an authorized repairman.

E. Care and Maintenance

1. DUST, DUST, DUST!
 - a. Make every effort to keep dust out of your television. The vents at the top on the back of the set allow hot air out, but unfortunately allow dust in. Keep vents covered when your television is not in use. Circuit boards may cause components to overheat and burn out.
 - b. Do not dust plastic screen covers. Wash with lukewarm water and towel dry. Otherwise, screen cover will get scratched.
2. Keep all liquids away from television set.
3. Keep televisions at room temperature. Don't leave sets outside in your car if temperature is not right (too hot or too cold). Changes in temperature can cause condensation to form inside and burn out electronic components.
4. BE A GOOD STEWARD

II. Videocassettes

A. Description

1. The videocassette is housed in a plastic case and is designed not to be touched by human hands.
 - a. The locking tape flap is opened by the video playback unit as the tape is lowered into position.
 - b. If the tape happens to protrude, the locking tape flap can be opened by pushing against the little lock in the hole beside the flap.
2. The videotape inside the cassette is 3/4" polyester, high energy tape, 1/1000" thick. It has four tracks: two audio (for dual track or stereo), one sync track, and one video track. The sync track serves the same purpose as sprocket holes on 16mm film. Videotape plays at 30 frames/second while 16mm film plays at 24 frames/second. The video track is the visual track. Videotape is recorded on one side only.

3. The bottom of the cassette has directional arrows around each reel. They go opposite of an audio cassette. Always tighten the slack within the cassette by turning the reels in the direction indicated by these arrows. Otherwise, you will crease or wrinkle the tape.

B. Handling

1. Heat is one of the biggest enemies to the video-cassette. Because the videotape is made of plastic, heat will melt the tape and cause it to stick to itself, the reels, the components of the playback unit, etc. Heat also ruins the quality of the recorded picture.
2. Rough handling of the videocassette can shake up the videotape on the reels and cause the reels to drag and to enter the machine at varying heights. This may cause the videotape to become caught around the capstan and pinch roller. This will completely ruin the videocassette. (This is the main reason for making certain that videocassettes are rewound on the specific machine to be used before playback.)
3. Direct sunlight is harmful
4. Dust is another great enemy to the videocassette as it is to any piece of equipment.
5. Keep videocassettes away from moisture.
6. Watch magnetic fields such as big magnets, motors, washers, dryers, car generators, etc.
 - a. The images on the videotape were recorded by a magnetic field in the recorder unit. If the desired alignment of the magnetic particles is altered, the image will be erased.
7. NEVER touch the videotape with your hands. Oil from your hands will cause the tape to stick to itself and different components of the machine. No matter how clean you think your hands may be, oils still are there and will damage the videotape. Tape should only be handled with soft clean gloves or a cloth.
8. ALWAYS STORE VIDEOCASSETTES IN THE PLAYED CONDITION
Do not rewind videocassettes once you have played them.
 - a. Whoever next uses the videocassette, must then rewind it on their particular machine.
 - b. Rewinding on the machine on which the video-cassette is to be played allows for the proper air space between the videotape and allows the tape to be wound evenly and smoothly.
 - c. Improper rewinding or mishandling after rewinding can cause an uneven stack within the videocassette. This may cause the reel to drag or the videotape to enter the playback unit at a varying height which will lead to videotape being caught around the capstan and pinch roller. This will ruin the videocassette and may cause serious

damage to the playback unit.

- d. If you would happen to receive a video-cassette that has not been rewound, be sure to fast-forward and rewind it before playing on your machine.

C. Operation

1. Be sure that the videocassette is inserted all the way in the platform.
 - a. With Sony playback units, the platform will automatically fall into position as you insert the videocassette.
 - b. With Concord playback units, the platform is lowered electrically into position. You should keep slight pressure on the video-cassette as it is lowered. With a Concord, if the videocassette is not properly inserted, it may cause major damage to the machine.

III. Video Playback Unit

A. Basic brands of playback units (These are not recorders)

1. Sony
2. Concord (made by Panasonic)

B. Basic Controls

1. Power Switch - The power switch is activated by pushing down on the switch, deactivated by pushing down again on the switch.
2. Power Light - The power light will indicate when the power is on.
3. The Stand-by Light - The stand-by light indicates that the videotape is out of the videocassette case and is being threaded or unthreaded. NEVER ATTEMPT TO OPERATE ANOTHER CONTROL WHILE THE STAND-BY LIGHT IS ON.
4. Digital Control & Reset - The digital control & reset button is located next to the power light and stand-by light. This counter does not indicate seconds or feet, but simply an arbitrary digit that is quite helpful in "cueing" the videotape.
 - a. Some of our videotapes have "color bars" and "sound test" at the beginning. To by-pass this, cue the tape to begin with the teaching.
5. Tracking Control - corrects static or a "jumping" picture. Every machine has a different tracking and may need to be adjusted for each videocassette.
 - a. Most playback units have a "fixed" position for the tracking control. Generally, this will be the proper setting for video playback. If there is a problem, the tracking control must be taken off the "fixed" position and adjusted.

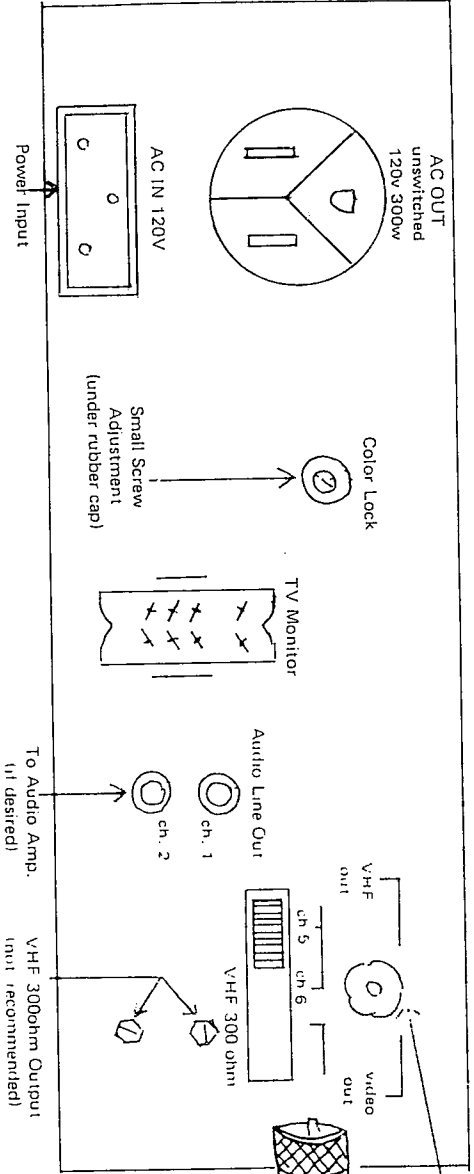
- b. With Concord units, the tracking control is "fixed" in the far-left position. To adjust, turn to the right.
 - c. With Sony units, the tracking control is "fixed" when the button is pushed in. To adjust, pull up on the button and move to the left or right.
- 6. Skew Control - The skew control is a minor control that corrects picture lean caused by tape tension.
 - a. Usually, rewinding the the videocassette on the unit on which it is to be played will eliminate any problems with tape tension.
 - b. What is often thought to be a "skew" problem is really a "horizontal hold" problem on the television set itself.
- 7. Audio Selector - The audio selector chooses which audio channel will be used for video playback.
 - a. There are three available channels: channel one, channel two, or mix.
 - b. Try mix first, then one of the other channels to get the best sound.
 - c. It is available to have one channel in English and another in a foreign language.
- 8. Headphone Jack - The headphone jack is designed for stereo headphones to monitor the sound track. If you listen on headphones, you will only hear out of one speaker as our videocassettes were recorded on monaural.
 - a. Sony units have a headphone volume control; Concord units do not.
- 9. Other Controls - The operational controls on the right side of the unit include:
 - a. Fast Forward
 - b. Play
 - c. Stop
 - d. Rewind
 - e. Do not try to operate more than one button at a time.
- 10. The ejection process differs on Concord and Sony units.
 - a. Concord has an electric elevation platform. It is lowered by pushing the "play" button and raise by pushing the "eject" button.
 - b. Sony has a manual lever that raises and lowers the platform.

C. Back of Playback Unit (refer to diagram on page 10)

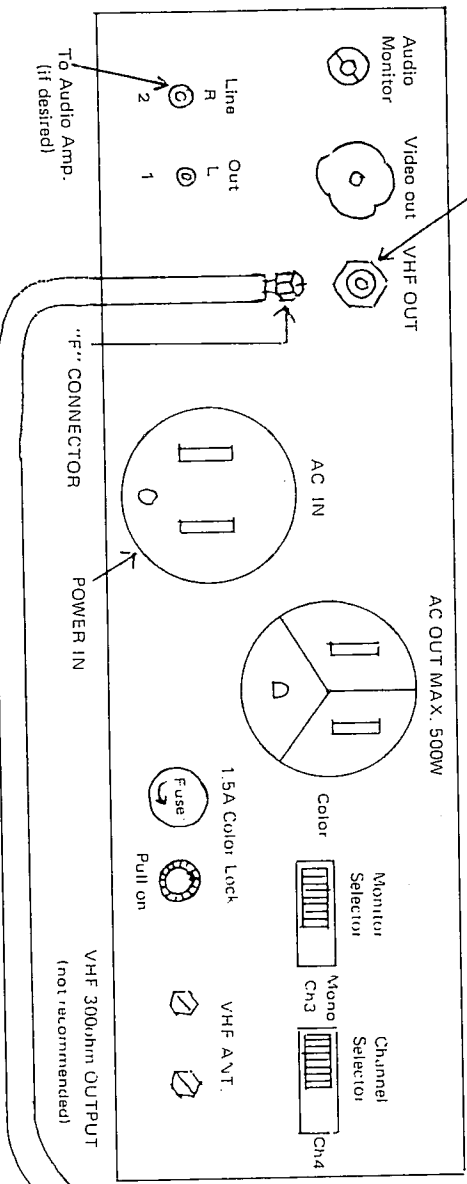
- 1. AC Input -
- 2. AC Accessory Output - The AC accessory output can be used to plug in the television set or small light. Be sure the wattage of your accessory does not exceed the specified wattage limit (Concord - 300w/Sony - 500w).

Concord VUP 7510

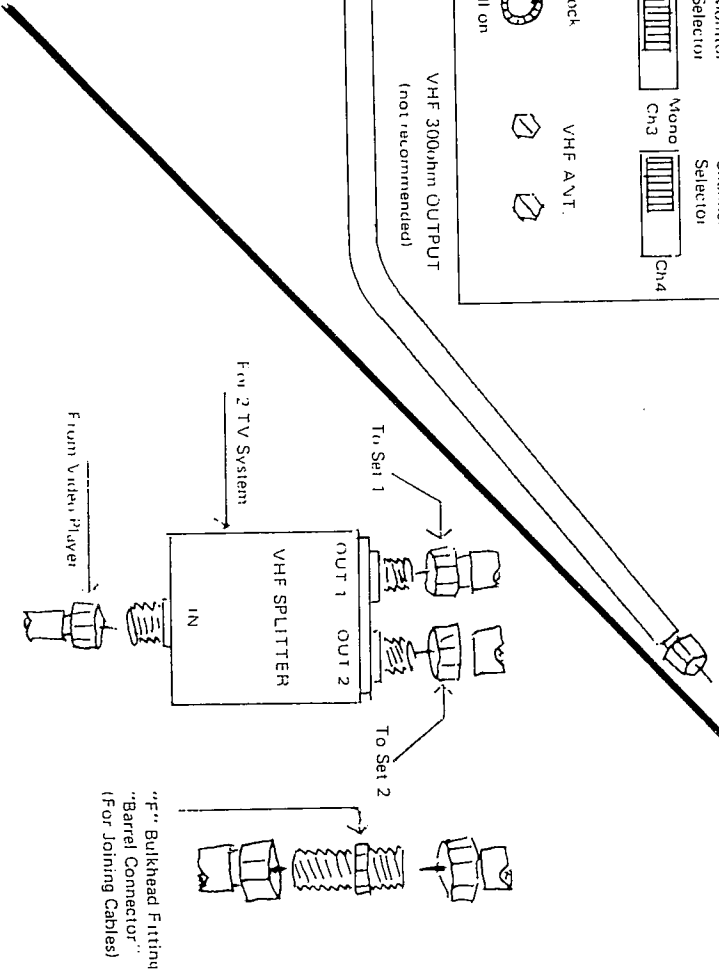
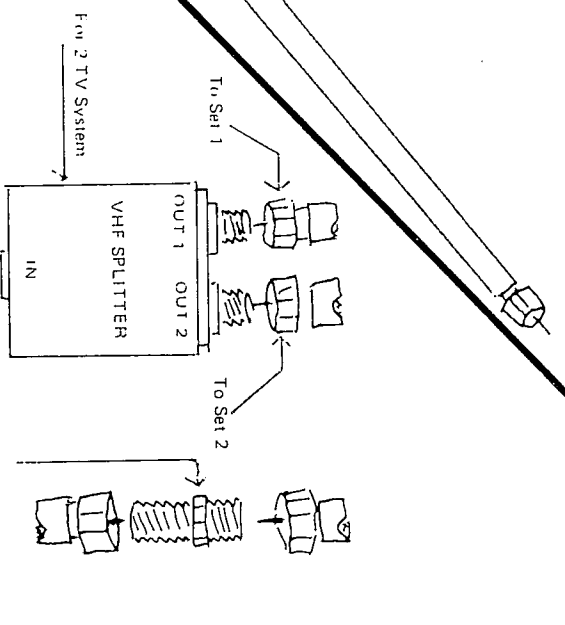
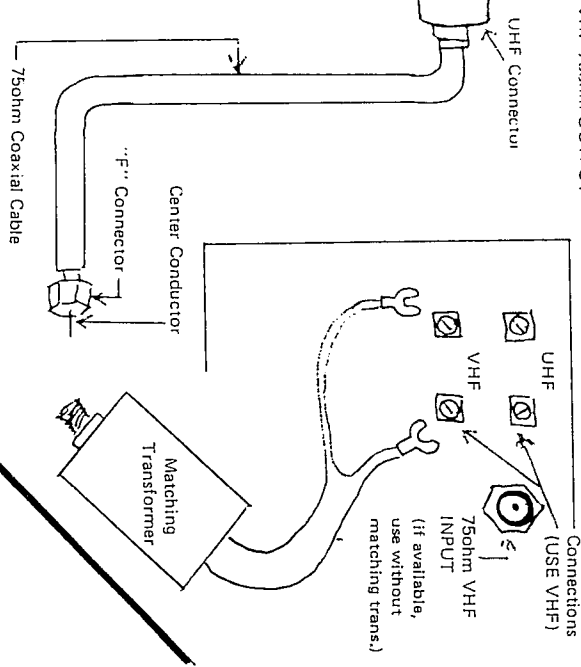
VIDEO CONNECTIONS



Sony VP1000



Color T.V.



3. Color Lock - The color lock may be adjusted if your color picture has rainbows or shifts from black and white to color.
 - a. On Sony units, the color lock control must be pulled out and adjusted.
 - b. On Concord units, a rubber cap must be removed and a small screwdriver inserted to make the adjustment.
4. Video Output - The video output varies on both tapes of playback units.
 - a. On Sony units, it is a separate output. You will rarely ever use it.
 - b. On Concord units, the video output serves also as the VHF output and will be used for video playback
5. VHF Output - The VHF output is controlled by a channel selector.
 - a. VHF output of a video playback unit must be connected to the VHF input of the television.
 1. Sony units have F-type connectors (same as on matching transformer and 75ohm antenna input).
 2. Concord units have UHF-type connectors even though it is VHF output.
6. Line Output Jack - The line output jacks are RCA-type audio output connections. Audio must be amplified before going into a speaker.
7. Audio Monitor - Sony has an audio monitor jack which can be used for monitoring the audio on the tape.
8. Color Monitor - The color monitor switch determines whether you have a black and white or color picture. This should be set on color at all times.

D. Connections on Video playback unit.

1. The 3-Prong Adapter - The 3-prong adapter should always be used in connection with the power cord if your wall outlets do not have grounded inputs. The small wire on the adapter should be secured on to the mounting plate screw for grounding the connection. This will safeguard electrical shock if there are any malfunctions in the playback unit.
2. The Co-axial Cable - The co-axial cable connects the VHF output of the playback unit with the VHF input of the television.

E. Operation of video playback unit.

1. Turn on power
2. Set audio selector on "mix" and then determine best sound by switching to either channel one or channel two.
3. Select proper video channel (Sony - 3 or 4; Concord 5 or 6).
4. Set color monitor switch to "color" on Sony.
5. Insert the videocassette
6. Press the "play" button

- a. On Concord units, this will lower the cassette into place before threading the video tape. On Sony units the videocassette will already have been in place.
 - b. The "stand-by" light will come on. Refrain from operating any other controls while this light is on.
7. Adjust tracking control, if necessary
 8. Adjust skew control, if necessary
 9. Adjust color lock control, if necessary
 - a. What may seem to be a "color lock" problem may be a "tracking" problem.
 - b. Another possibility might be that the "fine tuning" control on the television set may need adjustment.

NOTE: Drill yourself on the function of each control of your video playback unit. The time to do this is before a class begins, not during the first session.

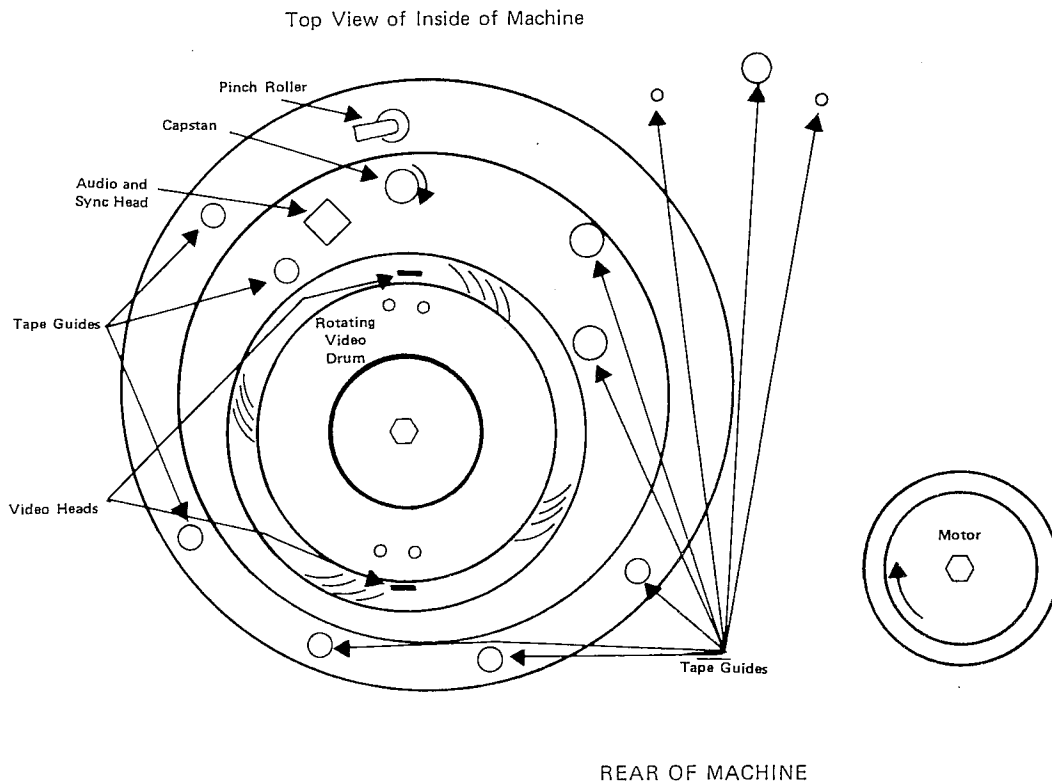
F. Maintenance

1. Dust - Keep dust off and out of machine. Use the dust cover that comes with the playback unit. Use a new nylon-tip paint brush to reach "hard-to-get" places.
2. Liquids - Keep all liquids away from the playback unit.
3. Keep ventilation holes clear at all times. Do not place the playback unit on a carpet, but on a solid surface.
4. Keep the unit at room temperature.
5. CLEAN THE INSIDE OF UNIT EVERY 35 HOURS OF PLAYING TIME.

G. Cleaning the inside of playback unit.

1. Do not be afraid of your playback unit.
2. Turn off your playback unit and disconnect your power cord.
3. Remove cover of unit. (Be sure not to lose screws)
 - a. For Concord units, use a small Phillips-head screwdriver.
 - b. For Sony units, use a small Allen wrench.
4. Become familiar with the inside parts of your unit.
 - a. Video heads, audio heads, and synch head
 - b. Rotating drum
 - c. Tape guides
 - d. Capstan
 - e. Pinch roller
5. Clean the video heads, audio heads, sync head, tape guides, pinch roller, and capstan with Q-tips moistened with 70% isopropyl alcohol or commercial head cleaner.

- a. The entire rotating drum should be cleaned. Dirt may keep videotape from having intimate contact with the video heads.
 1. Videotape touches 180° around the rotating drum.
 2. Videotape rides in the groove that is located diagonally across the rotating drum.
 3. Dirt, smog and oxide from the tape itself will build up on the rotating drum. It may require extra soaking with Q-tips to clean.
- b. The capstan must be very clean as well as the pinch roller. The video tape is driven between these two parts of the playback unit. (A product called "Rubber Drive" is especially good for cleaning the pinch roller.)
- c. The audio and sync head is one head and is located near the capstan. Gently rub vertically with moistened Q-tip.
- d. The video heads are located 180° opposite of each other in the groove of the rotating drum. Gently rub horizontally with a moistened Q-tip to clean. It may take more soaking than rubbing to clean video heads. **BE CAREFUL, VIDEO HEADS ARE FRAGILE AND VERY EXPENSIVE (\$400 - \$500) TO REPLACE.**
- e. Be sure to get all tape guides even underneath the front cover. You may need to use long-nose pliers to hold the Q-tips.



NOTE: If you are authorized by your Limb Headquarters to clean the inside of video unit, establish a pattern to follow:

- video rotating drum
- video heads
- audio/sync head
- capstan
- pinch roller
- tape guides

Do not try to clean with one Q-tip. You will need several to do the job properly.

H. Cords and Accessories

1. 3-Prong adapter
2. 12 foot RG 59/u co-axial cable
 - a. You can get varying lengths of co-axial cable at a local electronics store.
 - b. There are two types of co-axial cable: one with a center-conductor wire surrounded by tin foil (for permanent installation) and one with a center-conductor wire surrounded by wire mesh (for portable use). We use the wire mesh cable exclusively. Never use flat antenna wire to connect a television to the playback unit; it picks up interference too easily and will result in a poor quality picture.
 - c. Be careful to see that the center conductor wire is not bent and can fit easily into the center of the VHF 75ohm input. Otherwise, you will not have the proper connection.
 - d. Concord units supply co-axial cable that has an F-type connector on one end and a UHF-type connector at the other.
 - e. Sony units supply co-axial cable with F-type connectors at both ends.
3. Matching Transformer - The matching transformer converts the 75ohm output of the video playback unit to the 300 ohm input necessary to hook into the VHF antenna connections. This is not necessary if your television has a 75ohm VHF input. You may purchase extra matching transformers at a local electronics store.
4. Splitters may be purchased if you desire to set up more than one television set off your video playback unit. A splitter is absolutely necessary to properly align the output to more than one television set. (Do not use flat antenna wire to connect more than one television set.)
 - a. You will also need extra co-axial cables, barrel connectors (to connect cables) and matching transformers.
 - b. Use the proper splitters for the number of sets you hook up. (2-way splitter, for two televisions, 3-way splitter for three televisions, etc.)

5. You may also need extra lengths of co-axial cable if you position the playback unit at the opposite end of the room as the television set. Cables may be purchased in varying lengths at a local electronics store.

I. Tools and Small Repair

1. Tools

- a. small regular screwdriver
- b. small Phillips head screwdriver
- c. long-nose pliers
- d. soft nylon paint brush (for dusting)
- e. small Allen wrench
- f. 70% isopropyl alcohol
- g. Q-tips
- h. soft clean rag

2. Small repairs

- a. Notice the relationship between the motor, video rotating drum, and the capstan. If videotape has been caught between the capstan and the pinch roller, you can extricate the videotape by reversing the normal direction of the video rotating head. Be sure to hold the videotape with a clean cloth rather than with your bare hands. Once the videotape has been extricated, carefully remove the videocassette and rewind (by hand) the videotape onto the reels.
- b. You may avoid the need for repairs by never allowing your playback unit to run unattended.

FILM PROJECTION EQUIPMENT

I. Introduction

A. Film Theory

The basis of motion pictures is that the human eye perceives fluid motion at a rate of 16 movements per second. With motion pictures, this means 16 pictures or frames per second are required to give the appearance of motion.

If we had a moving object - say, a horse running - and we had a camera that took at least 16 pictures of the horse per second; then we developed those pictures and projected them at 16 frames/second, we would experience the same effect as the camera - a horse running.

When silent motion pictures were projected at 16 frames/second, "flickers" were noticeable because 16 frames/second, while fast enough to produce the motion effect, was not fast enough so that the human eye could not pick up the change from picture to picture. Sound motion pictures are projected at 24 frames/second, thus eliminating "flicker."

To project onto a screen what was photographed, you need the following:

- (a) Film - The film contains pictures or frames in the same sequence as photographed and is designed to project pictures at 24 frames/second.
- (b) Lamp - The lamp provides light which is directed through the film towards a screen.
- (c) Aperture - The aperture is an opening over which the film passes and through which the lamp shines. The aperture is the same size as each frame on the film.

With these, each picture or frame can be projected for $1/24$ of a second. Now, between the frames are dark spaces, which, if projected, appear as sporadic black lines which must be eliminated.

The film runs between two flat plates as it passes over the aperture. These plates comprise the "film gate." Within the film gate is a long, thin opening through which prongs are extended. These prongs are attached to a "claw arm" which extends into the film gate, moves down the distance of one frame, withdraws, moves up, and repeats the process as the projector runs forward. On one side of the film are little evenly-placed holes called "sprocket holes." The prongs extend through the sprocket holes and position one frame at a time. This process is repeated at the rate of 24 frames/second. This allows each picture to be projected individually, yet allows the 24 frames/second movement necessary for motion pictures.

To avoid the appearance of sporadic black lines, there is a "shutter." The shutter is a fan with three blades located between the lamp and the rear of the film gate which is mechanically timed to block light through the aperture while the film is moved from frame to frame. It allows light through the aperture only when the individual frame is stationary in the aperture.

The sound track on film can be of two types: magnetic or optical. Magnetic sound track is common on 35mm and 8mm film and operates on the same principle as audio magnetic tape. Optical sound track is common on 16mm film. Optical sound track is located on the side of the film opposite the sprocket holes and appears as clear diamond shapes strung together. Sound is recorded on 16mm film 26 frames ahead of its corresponding frame because the sound system is located that distance ahead of the film gate.

The sound system is comprised of three things: (a) the exciter lamp, (b) the sound drum, and (c) the lens. The film runs between the lens and the sound drum. (The film must be taut as it passes over the sound drum or the sound will be "garbled.") Light from the exciter lamp is focused by the lens through the optical sound track which distributes a variable light onto the sound drum. The sound drum contains a light sensitive device which changes the light variance into an electronic signal. This signal is then amplified and becomes sound.

II. Operation of a Projector

A. Basic Parts of a Projector

1. Feed Arm - The feed arm holds the reel of film to be projected. It is powered only during "rewind."
2. Feed Sprocket Wheel - The feed sprocket wheel has teeth which fit into the sprocket holes to move the film to and through the film gate.
3. Film Gate - The film gate has a solid back plate located in front of the lamp housing and a spring-loaded front plate.
4. Aperture - The aperture is the opening through which light from the projection lamp passes. This allows for the projection of the film image through the lens and onto the screen.
5. Lens - The lens inverts and magnifies the film image onto the screen. Different projectors require different procedures for removal of the lens (set screw, focus knob, etc).
6. Lamp - The lamp supplies the necessary light to project the film image onto a screen. Each projector will clearly state what type of lamp it requires. (Do not handle the lamp with your hands even when it is cold. Oil from your hands may cause the lamp, when heated, to explode.)
7. Shutter - The shutter is a fan with blades that has a timed mechanism to block out black spaces between frames. Sound film uses three blades; silent film uses two blades. (The Graphlex projector has a control to engage either the two-blade or three-blade mode.)

8. The claw or sprocket arm - The claw or sprocket arm pulls the film through the film gate and positions each frame for 1/24 of a second in front of the aperture.
9. Frame Adjustment Knob - The frame adjustment knob adjusts the claw arm so that frames are centered properly in front of the aperture.
10. Sound system - The sound system is comprised of: (a) exciter lamp, (b) lens, and (c) sound drum. Located 26 frames ahead of the aperture, light from the exciter lamp is focus by the lens through the optical sound track of the film onto the sound drum. The sound drum converts the light into sound.
11. Take-up Sprocket Wheel - The take-up sprocket wheel has teeth which fit into the sprocket holes to stabilize the pressure of the film moving from the film gate to the take-up reel.
12. Take-up arm - The take-up arm is powered to pull the film through the projector and onto the take-up reel.
13. Motor, Fan, Lamp (selector switches) - The selector arm (on Graphlex projectors) is one of the most important switches. DO NOT USE IT TO STOP OR START THE MACHINE. To start the projector, position the selector arm before turning on the on/off switch. To stop the projector or to switch to a different function, turn off the on/off switch before repositioning the selector arm. The "loop restorer" bar is to be used only in case of extreme emergency.

B. Major Causes of Damage To Film.

1. Dirty projector
2. Mishandling of the film (fingers on the film instead of edges; dropping film on floor; spilling coffee on film; etc.)
3. Improper threading
4. Improper film storage

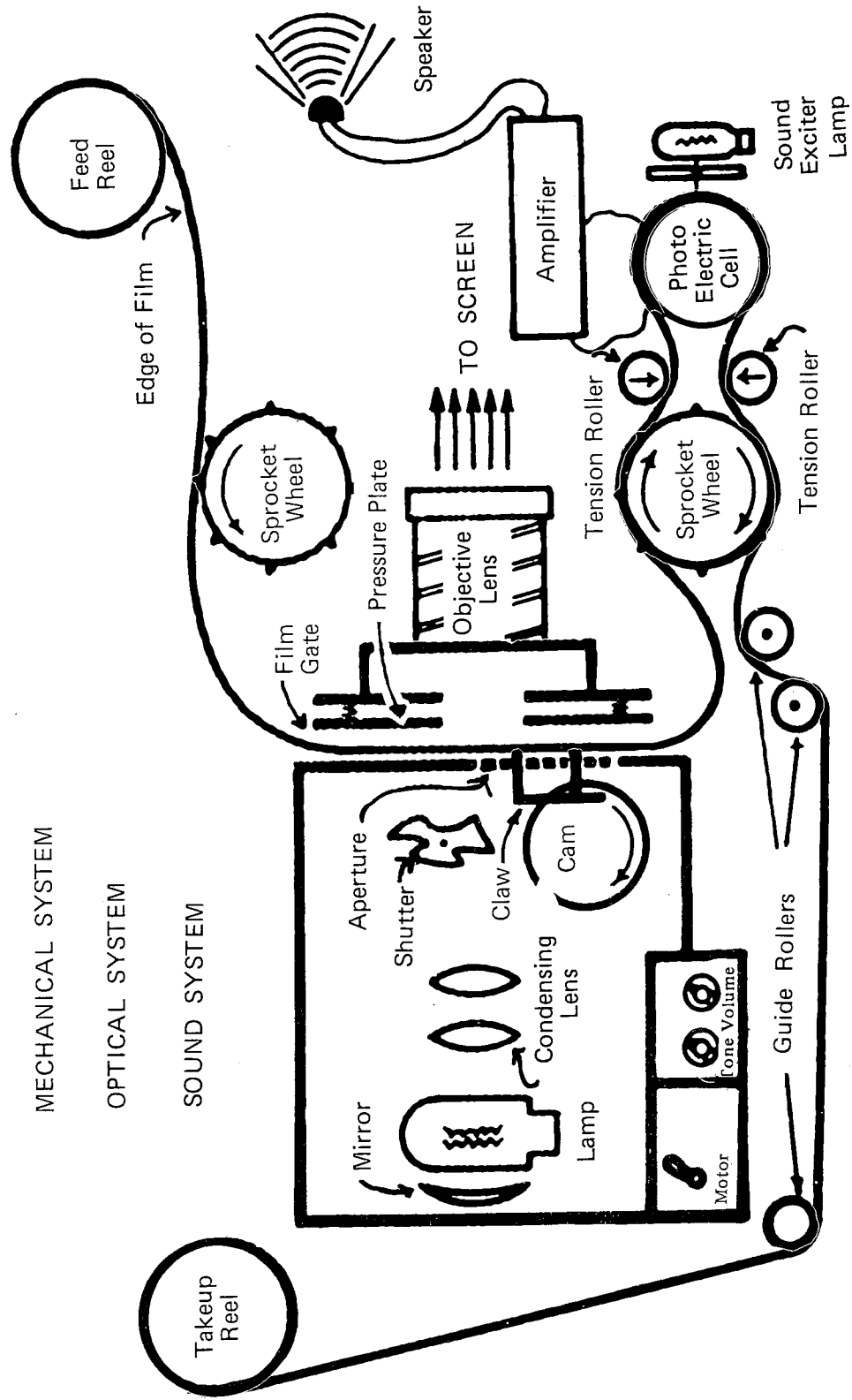
C. Cleaning the Projector

1. Absolutely every place that the film touches should be cleaned with lighter fluid and Q-tips. (Lighter fluid has a "naptha" base and leaves no residue.)
2. The film gate is especially important to keep clean. The entire film passes between the two plates of the film gate. If one tiny particle of dirt is lodged in the film gate, the entire film may be damaged. Do not blow into the film gate; moisture from your breath can damage the film.
3. It is good to keep all other areas of your projector spotless. Static electricity from the film will pick up dust particles.

D. Threading the Projector

1. See diagram - page 18
2. Be sure that sprockets are aligned with sprockets on drive wheels and the film gate.
3. Be sure that you have the proper tension on sound drum.
4. Be sure that your film loops are accurate according to the instructions with your particular projector.

GENERALIZED SOUND MOTION PICTURE PROJECTOR



(MOTOR AND FAN NOT SHOWN)

5. Automatic-threading projectors will do much of this for you. Other projectors will have a manual control knob which you can turn to check proper tensions and film threading.

NOTE: (At this point, the instructor demonstrates the above)

E. Film Storage

1. The best storage condition for film is at 50° fahrenheit with 50% humidity. (Acceptable tolerances are 35°-75° and 35% - 75% humidity). With temperature and humidity too low, the film will dry out, curl, crack, tear, etc. With temperature and humidity too high, film will begin to rot.

F. Maintenance and Repair

1. Dust inside the back of projector (every 4-6 months).
2. Check screws in machine; especially in film gate (after each use).
3. Check take-up arm parts occasionally. Some projectors use a spring belt that is easily replaced; others require repair by a qualified technician.
4. Lenses should rarely be cleaned; but if necessary, cleaned only with special lens paper. (Kodak)
5. Phone jacks for speakers may need occasional cleaning.
6. Ordinarily, do not do your own splicing. Mark the damage and notify International where repairs will be properly made.
7. You should be experienced at changing the projection and exciter lamps quickly. Keep your light intensity set on "normal" rather than "high". This will greatly extend the life of the lamp.
8. Speak in tongues and believe for your equipment.

G. Screens, Fall-off, and Reflective Factors

1. Screens may have beaded, smooth or lenticular surfaces.
2. Backing may be opaque or translucent.
3. Best screens are DA-LITE (beaded) or RADIANT (lenticular - reflective aluminum grooves)
4. Distance from screen (2 times the width - 6 times the width.).
5. Viewing Angle - 30° from edge of screen will avoid screen fall-off.

III. Conclusion

Become knowledgeable of your equipment, take good care of it, and speak in tongues much!