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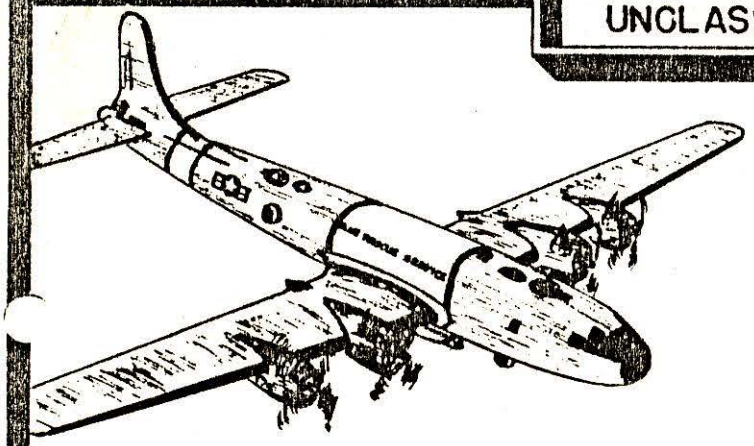

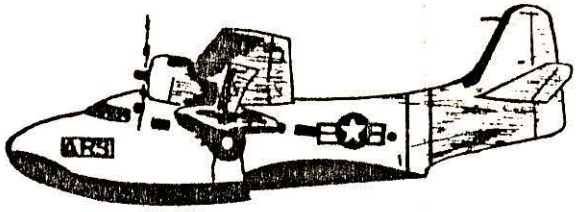

AIR RESCUE SERVICE

TRAINING MANUAL

UNCLASSIFIED

CHAPTER 3

GROUND TRAINING

30.1 GENERAL. Ground training requirements are divided into two (2) parts: (1) That required by higher headquarters, and (2) that specialized training required by this and squadron headquarters. To include in this manual the scope or requirements of training directed by higher headquarters would be repetition and unnecessary; however, references will be made to such directives. It is suggested that all activities supplement this manual with all appropriate training directives of higher headquarters.

.1.1 The requirements set forth in this chapter are of a recurring nature and may be expected to remain constant from one period to the next.

.1.2 For ease of reference, this chapter has been broken into sections on the basis of personnel affected. This will facilitate the determination of the training requirement of any individual assigned. Section 1 deals with general requirements which affect all personnel assigned; Section 2 is applicable to all flying personnel; Section 3 deals with communications training and is applicable to communications and flying personnel; Section 4 is applicable to the Para and Land Rescue Teams only.

30.2 REQUIREMENTS. Ground training requirements are as follows:

GENERAL GROUND TRAINING - Section 1

Information Hour	1 hr/week	12 - 14 hrs/quarter
Medical Training	1 hr/month	3 hrs/quarter
Weapons Familiarization	As required	
Physical Training	2 hrs/week	24 - 28 hrs/quarter
Other Training	1 hr/month	3 hrs/quarter
Articles of War	As required	

FLYING PERSONNEL TRAINING - Section 2

Proficiency Tng - Pilots	2 hrs/month	6 hrs/quarter
Proficiency Tng - Navigators		10 hrs/quarter
Personal Equipment	5 hrs/quarter	5 hrs/quarter

COMMUNICATIONS TRAINING - Section 3

Radio and Blinker Code	1 hr/month	3 hrs/quarter
Communications Subjects	1 hr/month	3 hrs/quarter
Communications Pers Tng	1 hr/month	3 hrs/quarter

PARA AND LAND RESCUE TEAM TRAINING - Section 4

Pararescue Tng Missions	72 hrs/quarter
Other Pararescue Tng	95 hrs/quarter
Land Rescue Tng Missions	72 hrs/quarter
Other Land Rescue Tng	89 hrs/quarter
Physical Training	48 - 56 hrs/quarter

CHAPTER 3

GROUND TRAINING

Section 4

Para and Land Rescue Team Training

34.1 GENERAL. The pararescue and land rescue teams should not be visualized as two separate rescue teams having comparable operating and training procedures; instead they should be viewed as a single rescue team composed of two (2) officers and nine (9) airmen with a common mission. This operational facility of an Air Rescue flight provides five (5) individuals who are qualified as parachutists, with the balance of the team (six men) as the spear heading land rescue and evacuation party. The success of their operations will be determined to a great extent by their ability to perform operational missions through very closely coordinated efforts. This aim can be realized only through employment of a very closely coordinated training program. In view of the above, the bulk of the training program presented herein for both pararescue and land rescue team members is identical. Unless specified within the individual paragraphs, all parts of this section are applicable to both teams.

.1.1 TRAINING REQUIREMENTS. Following is a consolidation of the quarterly training minimums required by this section:

Para and Land Rescue Team Members

Subject	Hours/Quarter
Field Training Missions	72
Vehicle Training	2¼
Communications	7

Subject	Hours/Quarter
Personal Equipment	3
Land Search Procedures	3
Physical Training	48 - 56
All Climatic Survival	24
Jungle, Arctic and Desert Survival	15
Public Information	3/4
Legal Aspects	3/4
Mountain Climbing (where possible)	12
Land Navigation	12
Medical Training	9
Pararescue Team Members Only	
Tree Climbing and Rope Let-down Procedures	6
Parachute Jump	1 ea 60 days

34.2 FIELD MISSIONS. It is obvious that rescue team members should be more familiar with field conditions than with garrison life. This is one of the key-notes of successful field operations. The field missions should not be consistantly of the 'fair-weather' variety. Adverse climatic conditions are often the cause of rescue missions. It is at this time that the team members must exert their maximum effort since the climatic condition that caused the crash will also exact its toll among the survivors. Operational procedures mastered by the team member under ideal or normal climatic conditions will often prove strange and difficult when attempted for the first time under adverse conditions. Due to this, many of the field training missions should be scheduled during abnormal climatic periods. The same is true in regard to terrain conditions. Specific attention should be given to the terrain characteristics when selecting the field training site. This site should also be changed continuously during the training year in order that the trainee may become acquainted with a wide variety of terrain conditions. Field training missions may be called by the commanding officer of the activity concerned without prior notice, and will serve to establish the anticipated rate of action to be expected in emergencies. This type of mission will also assist in maintaining a high degree of operational proficiency within the two teams. Whenever training missions of this nature are called without prior notice, it will be the responsibility of the commanding officer to notify participating team members' dependents when applicable.

.2.1 REQUIREMENT. A field training mission is required at least once every thirty (30) days. Each of these missions will be conducted under simulated operational conditions and will be of not less than twenty-four (24) hours duration.

34.3 VEHICLE TRAINING. To provide the versatility within the rescue teams desired by the Air Rescue Service, it is necessary that each team member be proficient in this phase of operations. Rescue team members have at their disposal, through T/O&E authorization,

several types of vehicles designed for many uses and for varied terrain conditions. A single mission may require the use of all such vehicles by several members of the team. Vehicle training should involve not only the routine road work and vehicle driving ranges, but also should consist of considerable off-road operations.

.3.1 REQUIREMENTS. Minimum quarterly vehicle training requirements for rescue team members are outlined as follows:

1. Carrier, Cargo M-29-C (Reference TM 9-772 and TM 11-2733). Thirty (30) minutes training required of each assigned team member.

2. Truck, 1/4 Ton, 4x4, C&R (Reference TM 9-803 and TB 9-803-4). There is no minimum training time established for this type vehicle although each team member should be familiar with its operations and terrain limitations.

3. Truck, 1-1/2 Ton, 6x6, P/C (Reference TM 11-2743). Thirty (30) minutes quarterly.

4. Truck, 2-1/2 Ton, 6x6, LWB, Cargo (Reference TM 11-2709). Thirty (30) minutes training is required per each team member.

5. Winch, Truck. Fifteen (15) minutes training required by each team member in the operation of, and limitations of this equipment.

6. Preventive Maintenance (Reference TM 21-305). Each team member will receive thirty (30) minutes training in this subject. This training will include the "Care and Maintenance" of pneumatic tires and preparation of the accident report.

34.4 COMMUNICATIONS. Every para and land rescue team member will receive sufficient communications training to allow him to use and maintain the applicable equipment in the field for extended periods of time. In addition to the hourly requirements listed below, each team member will demonstrate proficiency monthly in sending and receiving six (6) words per minute CW by code groups, and four (4) WPM blinker by code groups.

.4.1 REQUIREMENTS. The following hour requirements will be met by each team member quarterly:

1. Two (2) hours devoted to the following subjects:

   Land Lines (Orientation)
   Radio Nets (Familiarization)
   Voice Procedures (Familiarization)

Phonetic Alphabet (Familiarization)
Radio Logs (Familiarization)
Clarity (Orientation)

2. Four (4) hours will be devoted to lectures and demonstration of:

Jeep or Radio Trailer AN/VRC-1 (TM 11-277)
Handie Talkie SCR 536 (TM 11-235)
Gibson Girl Radio (Old and New)
Any other type of communications equipment, methods, or procedures peculiar to search and rescue activities.

3. Thirty (30) minutes will be devoted to the maintenance of communications equipment. This will also include the inspection, testing and storage of applicable equipment.

4. A thirty (30) minute orientation lecture will be presented to all team members dealing with the communications facilities of other services and cooperating agencies.

34.5 PERSONAL EQUIPMENT. A thorough knowledge of personal equipment is important to the team member for several reasons. Primarily, a large amount of the operational equipment which the team member utilizes in executing missions is designated as personal equipment. The life expectancy period of survivors is largely determined by the personal and emergency equipment at their disposal and its effectiveness under varied climatic conditions. A knowledge of the characteristics of the equipment is necessary as an aid to the teams in determining the proper plan of action. Of secondary importance is the use of this knowledge in briefing rescue crew members for missions over wilderness and/or barren lands.

.5.1 REQUIREMENTS. Each team member will receive three (3) hours of training in the following subjects quarterly. All subjects will be covered each quarter.

1. Life Rafts. (Reference FM 21-22, and T.O.'s 04-15 Series). This phase will include the various types of life rafts utilized by the USAF, the contents of such rafts, the maintenance of the rafts and their accessories, aerial delivery procedures; the inflating, boarding, capsizing, paddling, righting, and sailing of the rafts. The sailing should encompass basic seamanship such as, the use of the sea anchor, surf landings and tides and winds. The loading and transportation of injured personnel aboard life rafts should receive particular attention.

2. Life Vests. (Reference T.O.'s 13-1 Series). Life vest training will consist of the use of all types of Air

Force life vests, as well as the care, storage, and methods of inflation.

3. Emergency Rations. Emergency rations are utilized in trail activities by teammembers as well as by survivors. A thorough knowledge will be maintained by the team members covering the preparation and use of all applicable emergency rations.

4. Emergency Signaling Equipment. Periods of radio silence or of radio failure can often defeat the attempts of aerial support in contacting land and/or pararescue team members unless each team member is proficient in emergency signaling procedures. To minimize the restrictions that such conditions impose upon rescue operations, proficiency will be maintained by the team members in the use of, and improvision of emergency signaling devices and procedures. This training may be presented under both field and academic conditions and should include the use of glass and metal sighting mirrors, both standard and those improvised from ration tins or aircraft debris; the use of the signal panel, strip panel signals and the parachute as a signaling device; and construction and use of signal smoke fires.

5. Aerial Delivery Kits. (Reference FM 31-40). The Air Rescue Service utilizes a wide variety of aerial delivery kits. These kits may be divided into two basic categories: the kits which are prepared and dropped to survivors, and those dropped for the use of land and/or pararescue team members. A few of these kits are standard throughout the USAF, such as the E-18 and its supplementary kits. Other kits are standard only in certain theaters, such as the Arctic bail-out kit in use in the Alaskan Area. Rescue team members should possess a thorough knowledge of the component parts of all such kits and specifically, those utilized by the Air Rescue Service. Training covering aerial delivery kits should encompass the storage and dropping procedures from all rescue aircraft. The packing of fragile equipment and supplies is of utmost importance in this phase of training.

6. Clothing, Headgear and Footgear. (Reference FM 21-22, FM 21-15 and applicable T.O.'s). Rescue team members are provided the finest clothing, headgear and footgear for their field operations. This equipment is relatively worthless unless the wearer is well trained in proper care and use. The improper care and use of such equipment has in some cases contributed to the death of individuals when operating under extremely adverse climatic conditions; on a great many cases, the lack of this training has resulted in great discomfort to the team members which, of course, affects their operational proficiency. The use and care of rescue team clothing,

headgear, and footgear will include that designed for the arctic, desert, and tropics and is required training in all phases by all team members regardless of their geographic location.

34.6 LAND SEARCH PROCEDURES. Three (3) hours of field and academic training is required by all team members each quarter. Often the local terrain and vegetative conditions preclude the sighting of a crash site or survivors of a bail-out incident by aerial observation. The rescue team members may bring the mission to a successful close by proficient land search operations. Adverse climatic conditions many times may restrict search operations to that executed by the team members. In remotely located areas the team members can obtain the assistance of natives; while in more civilized areas, this assistance can be obtained from farmers, hunters or other local inhabitants. Regardless of the type of individuals assisting the rescue mission, the proper organization and deployment of this assistance is the responsibility of the basic rescue team. Team members should be proficient in the following subjects:

1. The types and evaluation of wilderness trails.

2. Land search patterns for small and large rescue groups under various terrain conditions.

3. The proper utilization of natives as runners, guides, and search team members.

4. Methods of locating bodies by observing both bird and animal scavengers.

5. Current procedures outlined in various training media for survivors to utilize in reaching civilization and a knowledge of the mistakes usually made by survivors in their attempt to reach civilization.

34.7 PHYSICAL TRAINING. All rescue team members will participate in a minimum of four (4) hours of physical training each week. (48 - 56 hours quarterly). The program will be designed to maintain physical standards required for any rescue mission.

34.8 ALL CLIMATIC SURVIVAL. There are many procedures relative to survival that are common to all areas of the world regardless of terrain or climate. In view of this, each team member should utilize this all-climatic phase as the basic foundation for the type of survival training necessitated by the peculiarities of his immediate area of operation.

.8.1 EVALUATION OF HAZARDS. (Reference FM 72-20). Nearly all areas of the world possess certain reptiles, insects, and animals which may be classified as possible hazards to rescue operations. In this same category, the various extremes of climate

and topography may be included. The evaluation of such hazards is necessary since many so-called hazards are actually non-existant but usually are perpetuated in the imagination of the layman and local native populace. Precautions taken to avoid such mental or fictional hazards only tend to delay an actual rescue mission. There is no justification for such a delay and it can be eliminated through proper indoctrination of teams relative to the evaluation of all hazards, both fictional and actual.

.8.2 LOCATION OF CAMP SITES. (Reference TM 1-240). Properly selected camp site locations are important to the physical well being of both the team members and the survivors they are protecting. The training should cover factors common to all areas of the world regarding climate, topography, animals, and insects.

.8.3 RECOGNITION OF EDIBLE PLANT MATERIAL. (Reference TM 1-240, FM 31-25, FM 72-20, and TM 10-420). Although not as nutritional as animal tissue, vegetation is much easier for the team member to obtain as food material. The survival rules regarding edible plant material are the same for all areas of the world. The training in this phase should include the following subjects:

1. Characteristics of poisonous vegetation.

2. Plant liquids.

3. Methods of preparing vegetation for food.

4. Poisonous plants that may be utilized for food when prepared by boiling and washing.

5. Fresh water and salt water vegetation and the rules pertaining to both types.

.8.4 EDIBLE LAND ANIMALS AND REPTILES. The common rules regarding the recognition of edible land animals and reptiles should be presented as well as the various methods of trapping and hunting this food material. Of specific importance is that of night hunting of the nocturnal feeders.

.8.5 SALT WATER AND FRESH WATER FISH AND ANIMAL LIFE. The factors which vary between the fresh and salt water food material should be clarified in this training phase. Of particular importance is bacteria found in fresh water animal life which is not found in the salt water animals. Rules regarding the recognition of poisonous fish should be presented.

.8.6 COOKING METHODS UNDER FIELD CONDITIONS. (Reference ADTIC Bulletin No. 5). Of particular importance is the evaluation of various cooking methods such as boiling, baking, roasting, and frying as well as eating animal meat raw. Improvising cooking utensils as well as cooking without utensils is one of the training requirements to be covered in this phase. The preservation

of meat by drying and/or smoking should be presented and evaluated for all climatic areas.

.8.7 IMPROVISION IN THE FIELD. Extensive field operations will very often present a complexity of obstacles to the rescue team member. The variance of such obstacles is often so great as to preclude the carrying of sufficient equipment to assist in overcoming each and every one of the obstacles that may be encountered during each mission. The lack of such equipment necessitates a great deal of proficiency, on the part of the team member, in field improvision. It is not intended that each team member be trained in improvising specific equipment and operational facilities, but instead, it is desired that this training instill within each member, the necessary confidence in his ability to improvise whatever facility or equipment that the peculiarity of the mission requires. This requirement can be met through training the team members while engaged in field training exercises, in the art of improvising clothing, shelter, rafts, traps, snares, cooking utensils, navigational aids, etc. The various improvisions with the parachute, as outlined in AF Manual 60-1, will also assist in attaining this training goal.

.8.8 NATIVE PSYCHOLOGY. The success of nearly all rescue missions, in remotely located areas, is a direct result of the ability of rescue team members to obtain friendly aid from the native populace. Such friendly aid may consist of native assistance in carrying equipment into a crash site, the evacuation of survivors from the crash site, and obtaining permission to penetrate the area of a possible crash site. This phase of training is relatively new to Air Rescue Service team members and considerable advancement is yet to be made before the desired training goal is reached. Native psychology lectures should include the following basic subjects:

1. Definition and evaluation of so-called friendly tribes, semi-hostile tribes, and hostile tribes.

2. Common customs and religion.

3. Bartering and gifts.

4. Treatment of natives who assist in trail operations.

5. Trail precautions in vicinity of hostile tribes.

6. Chiefs or headmen.

7. Methods of interrogating natives in regard to aircraft crashes and/or survivors. Evaluation of information gained through such interrogations.

8. Evaluation of natives near civilized areas or densely populated areas.

.8.9 REQUIREMENTS. The following training minimums will be met by each team member quarterly:

1. All climatic - 24 hours.

2. Jungle, Arctic or Desert, whichever is most applicable to the particular area of operation - 9 hours.

3. Jungle, Arctic or Desert, the two (2) not covered in No. 2 above - 6 hours.

34.9 JUNGLE SURVIVAL. There are various survival procedures which, in contrast to the all-climatic survival phase, are peculiar only to operations in the jungle areas of the world. This training may be introduced by the presentation of an applicable jungle survival film, such as "Land and Live in the Jungle", and then followed by subjects as outlined below:

1. Description and evaluation of various types of jungle areas, their climate and topography.

2. Acclimatization in jungle areas.

3. Specialized jungle rescue equipment such as the jungle hammock, machetes, packs, and insect protective equipment.

4. Care of equipment in tropical areas.

5. Shelter construction, such as lean-to types, "A" types, parateepees, thatching, sleeping platforms, tree platforms, floor insulation and trenching.

6. Location of emergency food material. (Reference TM 1-240, FM 31-25, FM 72-20). This training should include mangrove swamps, tropical mountainous terrain, valley areas, and tropical coastal areas.

7. Identification of animals and insects of tropical areas.

34.10 ARCTIC SURVIVAL. (Reference ADTIC Bulletin No. 6, T.O. 00-60B-1, and FM 70-15). This phase of specialized training may be introduced by any of several current arctic survival films. Two (2) such films presently available are "Land and Live in the Arctic", and Summer Survival in the Tundra". The basic subjects required in this training phase are:

1. Acclimatization in Arctic areas. (To include progressive exposure and diet).

2. Description and evaluation of climate and terrain of arctic areas.

3. Identification of animals and insects of arctic areas.

4. Shelter construction, such as, snow caves, trenches, parachute, and lean-to types.

5. Methods of travel in arctic areas, both summer and winter. This should include foot, dogs, and mechanized.

6. Recognition and travel over snow avalanche areas.

7. Location of emergency food material. (Vegetation, animal and marine life).

34.11 DESERT SURVIVAL. The training film "Land and Live in the Desert" should be utilized as one of the training references for this phase.

.11.1 DESERT CHARACTERISTICS. There is a wide variance in desert areas of the world. The various types should be presented and evaluated in regard to their temperature, dust and sand storms, rain and/or thunderstorms, wind, haze, visibility, and topographical differences such as level, rolling or boon-docks and mountainous areas.

.11.2 SHELTER AND SHELTER SITES. The various natural shelter facilities available in desert areas are of great benefit to team members as they may be utilized in conjunction with shelter equipment. Such facilities include caves, sand trenches, canyons, dry water courses, and local vegetation.

.11.3 WATER. The importance of water to team members and survivors in desert areas is of primary interest. This facility should be clearly evaluated and proper utilization procedures outlined. This phase of training should include the use of the desert water table, natural desert water sources, contamination of natural desert water sources, correct procedure of rationing and drinking of water while operating under extreme desert conditions, the use of food, salt tablets and cigarettes when the water supply is low, and the harmful effects of consuming too much water when the water ration is low. This phase should also include reference to natural phenomena which indicates the presence of desert water, i.e., the flight of birds, oasis, dry water courses, mud flats, evening dew, etc.

.11.4 DESERT EQUIPMENT. The more important, or basic desert equipment should be described and the correct procedures for utilizing this equipment explained. Such equipment should include shelter provisions, water containers, sun glasses, etc.

.11.5 LOCATION OF EMERGENCY FOOD MATERIAL. Since desert areas are noted for their scarcity of food material, the well trained team member will find knowledge regarding the location of emergency food material invaluable to his operations. This phase should include vegetation as well as animal sources of food.

34.12 PUBLIC INFORMATION. (Reference ARSR 190-3). (Forty-five (45) minutes training required per team member every quarter). In the absence of a public information officer, the senior officer or team commander will assume the responsibility for public information in response to inquiries from various news media. The policies relating to the release of supplemental information pertinent to rescue activities should be well-known by all the rescue team members. The training lectures of this phase should include the following:

1. Policies regarding release of causes of crash or incident.

2. Policies regarding release of names of personnel aboard the aircraft or involved in the incident, including the non-injured, injured and dead.

34.13 LEGAL ASPECTS. (Reference AR 30-1810, AFR 205-1, and TM 12-240). Forty-five (45) minutes training required per team member every quarter.

.13.1 REMOVAL OF BODIES. There is a wide variance between the laws of different states and countries in regard to the removal of civilian and/or military bodies from crash sites. The local laws and military responsibility established in each state or country of a flight's area of rescue responsibility should be well-known by all rescue team members of that flight.

.13.2 PERSONAL EFFECTS. The removal, safeguarding, and disposition of personal effects found in crash sites is a responsibility of each team member.

.13.3 MARKING OF AIRCRAFT WRECKAGE. (Reference ARSR 55-11). The proper marking and maintenance of aircraft wreckage markings is a responsibility delegated to rescue team members.

.13.4 SAFEGUARDING CLASSIFIED DOCUMENTS FOUND IN AIRCRAFT CRASHES. The responsibility for safeguarding classified documents found in aircraft crashes cannot be too highly stressed. This training should include the proper methods of inventory, safeguarding on the trail, the differentiation between possession of and knowledge of classified material found in crash sites, and the disposition of such material when found in friendly, neutral or hostile territory.

34.14 MOUNTAIN CLIMBING. (Reference FM 70-10). Where geographically possible each team member will receive twelve (12) hours training each quarter. Rescue teams located in such areas where field training in this phase is not possible, will be required to accomplish three (3) hours of academic or demonstration training in this phase every quarter. Various types of mountainous formations require different degrees of proficiency in mountain climbing procedures as well as a variance in the scope of procedures utilized.

.14.1 ORIENTATION. Methods of acclimatization and maladies should be presented. Emphasis should be placed on mountain sickness and glacier lassitude.

.14.2 EVALUATION AND CLASSIFICATION OF DIFFERENT MOUNTAIN TERRAIN. This training should include cliffs, rocky crags, ravines, crevices, glaciers and deep snow areas.

.14.3 ROPE CROSSING OF RAVINES, CREVICES, AND STREAMS. Rope footbridges and improvised cableways should be demonstrated and utilized extensively during field training missions.

.14.4 BALANCE CLIMBING. This is one of the more important portions of mountain climbing training. A wide variance of holds and body positions should be known by the team members. Basic subjects relative to this phase are as follows:

Definition	Cross pressure holds
Body position	Foot holds
Pull holds	Shoulder stand
Push holds	Use of holds
Friction holds	Safety precautions

.14.5 EQUIPMENT, EVALUATION AND USE.

Ropes and knots
Care of ropes
Inspection of ropes
Use and method of tying the bowline, butterfly, square, fisherman, slip, prusik and clove hitch knots.
Pitons, snaplinks and hammer

.14.6 BELAYS. Belaying procedures should include all positions. Of specific importance are the sitting belay, standing belay, piton belay, tension belay, rock or tree belay, and anchors.

.14.7 RAPPELS. The purpose and establishment of the body, hasty and seat rappel should be known by all team members. The seat rappel should include both the shoulder and hip methods.

.14.8 ROUTE SELECTION. Evaluation of terrain by both visual study and map study should be included in this phase to provide a high degree of proficiency relative to route selection.

.14.9 TREE CLIMBING. The art of safe tree climbing is invaluable to the team member. The use of tree climbing for both observation and rope work should be explained in training lectures as well as practiced during field missions.

.14.10 ROPED (PARTY) CLIMBING. Proper procedures of roping a party and practice of roped party climbing should be included in field training missions. Rope signals should be utilized and known by the team members.

.14.11 HAULING LINES. There are three (3) types of hauling lines required in this phase: the horizontal, diagonal, and vertical lines.

.14.12 SPECIAL CLOTHING. The footgear of the mountain climber is of vital importance. The description and evaluation of proper footgear should be stressed.

.14.13 EVACUATION. The evacuation of injured personnel from mountainous terrain is a difficult and often dangerous task. A high degree of proficiency should be maintained by all team members in such procedures. This training should include ascending and descending slopes, cliff evacuation, pole carry, evacuation from trees, evacuation in snow, and litter construction and carry.

34.15 LAND NAVIGATION. This phase of rescue training is of primary importance. Each rescue team member, being a potential team leader of an untrained land rescue party, must be highly proficient as a land navigator. Many remote areas of the world are poorly charted and operations in such areas require considerable accuracy in land navigational procedures. Time, being the essence of rescue, can be minimized during a land or pararescue mission through the land navigational proficiency of the rescue team members.

.15.1 REQUIREMENTS. Three (3) hours of academic training and nine (9) hours of field training will be required of each team member every quarter.

.15.2 NAVIGATIONAL TRAINING OUTLINE. The academic and field training in land navigation should include the following subject matter:

1. Map Making.

   Unsurveyed Areas
   Inaccuracies of old maps
   Triangulation

2. Methods of Re-orientation When Lost.

3. Simple Land Navigation Aids.

   Animal trails
   Typical areas to circumnavigate
   Compasses and their use to include variation computation.

4. Celestial Navigation.

   Evaluation
   Use of Sextant
   Use of Rude Star Finder
   Use of Navigational Tables

5. Polar Grid System of Navigation.

Evaluation and use

34.16 MEDICAL TRAINING. Survivors of aircraft crashes or bail-out incidents require medical attention at the earliest possible moment. This is true in 100% of such incidents, although in some cases the only injury may be that of slight mental shock. Even under ideal climatic conditions, the medical task is difficult due to the minimum facilities available under field conditions. This factor emphasizes the need for medical proficiency within the rescue teams. This responsibility is vested not only in the medical officer of the teams, but also in each individual.

.16.1 REQUIREMENTS. Each team member will be required to accomplish a minimum of nine (9) hours training in the medical phase quarterly.

.16.2 MEDICAL TRAINING OUTLINE. The following subjects will be thoroughly covered, and application to rescue procedures emphasized:

1. Personal Hygiene
2. Field Sterilization Techniques
3. Field Sanitation
4. Principles of First Aid
5. Treatment of Shock
6. Management of Injuries, Frostbite and Burns
7. Treatment of Fractures
8. Snakebite and its Treatment
9. Splints and Plaster
10. Preparation of Injured for Evacuation (land, water and air)
11. Pharmacology (Use of drugs utilized in rescue missions).
12. Chest Wounds
13. Resuscitation
14. Medical Aerial Delivery Kits (contents and packing for aerial delivery)
15. Medical NCO Kits (M-2) and Medical Parachutist Kits

34.17 PARARESCUE TRAINING. The training subjects outlined under this phase are applicable only to members of pararescue teams. This training has four (4) basic objectives. The first, and of primary importance to pararescue proficiency, is precision spot jumping. The remaining three (3) objectives are parachute manipulation, proper body position when leaving the aircraft, and the perfection of parachute landing falls.

.17.1 TREE CLIMBING AND ROPE LET-DOWN PROCEDURES. Six (6) hours training quarterly per pararescue team member. A rope let-down mock-up should be constructed by each flight possessing a pararescue team. Prior to utilizing this training aid, it should be inspected by the local Base Ground Safety Officer.

.17.2 SPOTTING. Each team member will attain and maintain a high degree of proficiency in spotting procedures. This goal may be accomplished by rotating each jumper into the spotting position during training jumps as well as presenting lectures relative to correct spotting procedures.

.17.3 PARACHUTE JUMPS. Heavily vegetated areas and terrain of adverse formations require that pararescue personnel maintain a very high degree of proficiency in effecting safe tree landings as well as open terrain landings. Each team member shall make not less than one (1) parachute jump in each sixty (60) day period. Where geographically possible, at least half of all training jumps will be made into trees or forested areas.

.17.4 JUMPMASTER TRAINING. Each team member will receive indoctrination as a jumpmaster.

.17.5 SAFETY FACTORS:

.17.5.1 Training jumps <u>will not</u> be made under the following conditions:

1. Wind velocity or gusts over fifteen (15) miles per hour.
2. At any altitude under eight hundred (800) feet above the terrain.
3. Any other conditions considered dangerous by the team commander.

.17.5.2 It is not required that a free fall parachute jump be made for training purposes; however, <u>one free fall</u> parachute jump per team member per year is authorized if such is desired by the team member and only at such time as an S.O.P. exists within the Air Rescue Service.

.17.5.3 A reserve parachute will be worn by each man on every jump.

.17.5.4 No jumps will be made without proper protective pararescue clothing.

.17.5.5 Training areas used for the accomplishment of tree jumps should be selected with care. Timber areas of Alpine Fir, Cedar (Western Red), Hemlock and Tamarack or Western Larch are definitely hazardous. The Alpine Fir and Cedar are dangerous due to the downward sweep of their limbs which shed the parachute canopy. The Tamarack and Hemlock are a hazard due to their brittleness. The Sequoia or Redwood should be classified with the Alpine Fir and Cedar. Large timber of any type should be avoided as the parachutist may be bounced with considerable force against a tree trunk. An area with small trees with a 4" diameter--breast high--or under, is a relatively safe place for parachute landings. Any area having

small springy trees or bush is excellent as such vegetation provides a cushion for the parachutist, slowing him gradually and greatly reducing his landing shock.

.17.5.6 Direction and degree of slope of the terrain will indicate whether "up" or "down" air will be encountered by the parachutist and will minimize or add to the wind hazard. Radiation heating and cooling should always be considered at time of estimation of wind velocity.

.17.5.7 Prior to parachute training jumps, the "Rate of Descent Chart" (Ref. Attachment #1, ARS Regulation 55-12) will be consulted in order to determine a safe weight-altitude relation for each individual jumper.

.17.5.8 Aircraft utilized for training jumps will be equipped with approved static line and secure footing area for the jumper at the door of the aircraft. Handles, hinges and other protrudences near the door, that might interfere with the jumper or his gear, will be covered so as to prevent any possible snagging or fouling.

.17.5.9 Prior to putting the jumpers in the door of the aircraft, the team commander will check each man for proper wearing, fit and security of his gear.

.17.5.10 Air Rescue Service pilots will normally adhere to the standard procedure for dropping pararescue personnel. The jump master will have directional control, via interphone, of the aircraft on the final run into the target. With the concurrence of the team commander, the jump master will indicate the most practical and desirable drop zone, determine the release point, and give the signal to the team members to jump. The final decision as to whether or not the jump will be executed will rest solely with the team commander and will be based upon a complete analysis and evaluation of the situation.

.17.5.11 Training jumps, including open field jumps, will not be made in the close proximity of runways, taxi strips, hardstands or any other hard surfaced areas. (Close proximity shall be interpreted as any release point where the wind may drift an uncontrolled parachute into or over a hard surfaced area).

.17.5.12 The jumpers should avoid using their hands or feet to retard their fall as they enter and descend through trees. This has been found to be a major factor in avoiding injuries. Hands and feet should NOT be used in any manner to slow down or retard the jumper's descent. Grabbing of tree tops or limbs stops the jumper, frequently, long enough for the canopy to partially deflate. As the canopy load is transferred to the tree top or limb, and as the chute collapses, the tree member will often break. Under these conditions the chute occasionally will not open again if the timber is dense. This may also

occur when the chute catches on a single tree member which is not strong enough to support the jumper's full weight as the canopy collapses. However, in this case the parachute is fairly well strung out and will usually reinflate readily. The parachute does not have a chance to tangle to the extent it may if the jumper should use his hands or feet.

HEADQUARTERS AIR RESCUE SERVICE
WASHINGTON 25, D. C. 24 APRIL 1951

AIR RESCUE SERVICE MANUAL)
NO. 50-1)

AIR RESCUE TRAINING MANUAL

Amendment Sheet No. 1

Remove	Insert
54.4.7	54.4.7
53.4.5	53.4.5
53.4.1	53.4.1
34.17.2	34.17.2
34.17.5.12 (last 6 lines)	34.17.5.12 --- 34.15.5.15

BY ORDER OF COLONEL KIGHT:

OFFICIAL:

G D Specht

G. D. SPECHT
Major, USAF
Adjutant General

JOHN BELECHAK
Lt Colonel, USAF
Chief of Staff

DISTRIBUTION:
3 ea ARS Sq Hq
3 ea ARS Flight
2 Hq MATS, D/O
1 ea Opnl Control Comdr
1 ea Base IG (ARS locations)

.17.2 SPOTTING. Each team member will attain and maintain a high degree of proficiency in spotting procedures. At least two (2) spotter chutes type G 8, authorized on TO&E 1-1613 or suitable substitute will be used as an integral part of the spotting procedures. Each para-rescue team member will be rotated into the spotting position during training jumps, accomplishing the entire spotting procedure himself on that series of jumps.

.17.3 PARACHUTE JUMPS. Heavily vegetated areas and terrain of adverse formations require that pararescue personnel maintain a very high degree of proficiency in effecting safe tree landings as well as open terrain landings. Each team member shall make not less than one (1) parachute jump in each sixty (60) day period. Where geographically possible, at least half of all training jumps will be made into trees or forested areas.

.17.4 JUMPMASTER TRAINING. Each team member will receive indoctrination as a jump master utilizing at least two (2) spotter chutes on all land jumps.

.17.5 SAFETY FACTORS:

.17.5.1 Training jumps <u>will not</u> be made under the following conditions:

1. Wind velocity or gusts over fifteen (15) miles per hour.
2. At any altitude under eight hundred (800) feet above the terrain.
3. Any other conditions considered dangerous by the team commander.

.17.5.2 It is not required that a free fall parachute jump be made for training purposes; however, <u>one free fall</u> parachute jump per team member per year is authorized if such is desired by the team member and only at such time as an S.O.P. exists within the Air Rescue Service.

.17.5.3 A reserve parachute will be worn by each man on every jump.

.17.5.4 No training or operational jumps on land will be made without the jump suit (2 piece canvas) and helmet.

.17.5.5 Training areas used for the accomplishment of tree jumps should be selected with care. Timber areas of Alpine Fir, Cedar (Western Red), Hemlock and Tamarack or Western Larch are definitely hazardous. The Alpine Fir and Cedar are dangerous due to the downward sweep of their limbs which shed the parachute canopy. The Tamarack and Hemlock are a hazard due to their brittleness. The Sequoia or Redwood should be classified with the Alpine Fir and Cedar. Large timber of any type should be avoided as the parachutist may be bounced with considerable force against a tree trunk. An area with small trees with a 4" diameter--breast high--or under, is a relatively safe place for parachute landings. Any area having

occur when the chute catches on a single tree member which is not strong enough to support the jumper's full weight as the canopy collapses. However, in this case the parachute is fairly well strung out and will usually reinflate readily. The parachute does not have a chance to tangle to the extent it may if the jumper should use his hands or feet.

.17.5.13 No jumps will be made without "Mae West" life vest if water is closer than four hundred (400) yards. Open water jumps will be made without jump suits; however, helmets will be worn on every jump. Practice jumps with the one man life raft will be accomplished at least two (2) per year if proper rescue boat facilities are available and water temperature is not below 60 degrees fahrenheit. A "Mae West" life vest will be worn on all water jumps. Exposure suits can be used if water is below 60 degrees fahrenheit, but no jumps will be made if water temperature is below 50 degrees fahrenheit.

.17.5.15 Ground personnel, including medical personnel with first aid equipment, will be utilized as a standby rescue team at the intended landing area on all training jumps.

.17.5.16 Swimming instructions will be given to all para-rescue and land rescue personnel who cannot swim.