FAR Part 135
AIRCREW TRAINING MANUAL

Sikorsky SK-61 Helicopter

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APPENDIX A

SECTION **PAGE**

RECOMMENDED TRAINING TIMES

	INITIAL NEW-HIRE			
PART 135	**Basic Indoctrination**		**General Emergency**	
Aircraft Family	Type Operation	Training Hours	Type Operation	Training Hours
Transport Category	ALL	32	ALL	8
Multiengine	IFR/VFR	24	Land Operations	4
			Extended Overwater	4
	VFR Only	16	Uninhabited Environment	4
Single engine	IFR/VFR	24	Land Operations	2
			Extended Overwater	4
	VFR Only	16	Uninhabited Environment	4
Helicopter	IFR/VFR	24	Land Operations	4
			Extended Overwater	4
	VFR Only	16	Uninhabited Environment	4

LESSON PLAN: **BASIC INDOCTRINATION**

OBJECTIVE: To introduce the new-hire crewmember to the company and its manner of conducting operations in air transportation, to acquaint the crewmember with the company's policies, procedures, forms, R-0anizational and administrative practices, and to ensure the crewmember has acquired basic airman knowledge.

INSTRUCTIONAL DELIVERY METHODS: Lecture/Computer Training

TESTING/CHECKING: Written or Oral exam

OPERATOR SPECIFIC

A. **DUTIES AND RESPONSIBILITIES**

1. Company history, R-0anization, and management structure
2. Operational concepts, policies, and kind of operation
3. Company forms, records, and administrative procedures
4. Employee standards and rules of conduct
5. Employee compensation, benefits, and contracts
6. Authority and responsibilities of duty position
7. Company required equipment

B. **APPROPRIATE PROVISIONS OF THE FEDERAL AVIATION REGULATIONS**

1. Flight crewmember certification, training, and qualification requirements
2. Medical certificates, physical examination, and fitness for duty requirements
3. Flight control requirements (flight-locating)
4. Flight duty and rest requirements
5. Record keeping requirements
6. Operational rules in Parts 61, 91, 119, and 135 and any other applicable regulations
7. Regulatory requirements for company manuals

C. **CONTENTS OF CERTIFICATE AND OPERATIONS SPECIFICATIONS**

1. Regulatory basis in Parts 119 and 135 and Title 49 of the U.S. Code of Federal Regulations
2. Definitions, descriptions, and R-0anization of Operations Specifications
3. Limitations and Authorizations of Operations Specifications
4. Description of Certificate
5. Description of FAA Certificate Holding District Office and Responsibilities of FAA Principal Inspectors

F. **AIRSPACE AND ATC PROCEDURES**

1. Definitions (such as precision approaches, airways, and ATIS)
2. Description of airspace
3. Navigational performance and separation standards
4. Controller and pilots responsibilities
5. ATC communications procedures (normal and emergency)
6. Air traffic flow control

G. **EN ROUTE AND TERMINAL AREA CHARTING AND FLIGHT PLANNING**

1. Terminology of charting services (such as Jeppesen, NOAA)
2. Takeoff minimums, landing minimums, and alternate requirements
3. General company flight planning procedures
4. Flight Service and International procedures
5. Airport diagrams

H. **CONCEPTS OF INSTRUMENT PROCEDURES**

1. Definitions (such as MDA, HAA, HAT, DH, CAT II, ILS, and Nopt)
2. Holding patterns, procedure turns
3. Precision approaches (such as CAT I, CAT II, and CAT III)
4. Non precision approaches
5. Circling, visual, and contact approaches
6. Visual cues before and during descent below DH or MDA

LESSON PLAN: **GENERAL EMERGENCY**

OBJECTIVE: To develop the necessary knowledge and skills in the actual use of certain items of emergency equipment, as well as the procedures to be followed, when emergency situations occur.

INSTRUCTIONAL DELIVERY METHOD: Lecture, demonstration, drill

TESTING/CHECKING: Written or Oral exam

EMERGENCY SITUATION TRAINING

A. **FLIGHT CREWMEMBER DUTIES AND RESPONSIBILITIES**
1. Emergency assignments
2. Captain's emergency authority
3. Reporting incidents and accidents

B. **CREW COORDINATION AND COMPANY COMMUNICATIONS**
1. Cabin crew notification procedures
2. Ground agency notification procedures
3. Company communications procedures

C. **AIRCRAFT FIRES**
1. Principles of combustion and classes of fires
2. Toxic fumes and chemical irritant
3. Use of appropriate hand-held extinguishers
4. Lavatory fires
5. Smoke masks and goggles

D. **FIRST AID EQUIPMENT**
1. Contents of first aid kit
2. Requirements for first aid kit integrity
3. Use of individual items

E. **ILLNESS, INJURY AND BASIC FIRST AID**
1. Principles of CPR
2. Ear and sinus blocks
3. Seeking medical assistance
4. Treatment of shock
5. Heart attack and pregnancy situations

F. **GROUND EVACUATION**
1. Aircraft configuration
2. Blocked or jammed exit procedures
4. Fuel spills and other ground hazards

5. Handicapped persons

G. **DITCHING**
1. Cockpit and cabin preparation
2. Passenger briefing
3. Crew coordination
4. Primary swells, secondary swells, and sea conditions
5. Ditching heading and water landings
6. Ditching at night

H. **RAPID DECOMPRESSION** (IF APPLICABLE)
1. Respiration
2. Hypoxia, hypothermia, hyperventilation
3. Time of useful consciousness
4. Gas expansion/bubble formation
5. Physical phenomena and actual incidents

I. **PREVIOUS AIRCRAFT ACCIDENTS/INCIDENTS**
1. NTSB accident report reviews
2. Human factors/considerations
3. NASA reporting system

J. **CREWMEMBER INCAPACITATION**
1. Company procedures
2. Reporting requirements (NTSB)
3. Interference with crewmembers

K. **HIJACKING AND OTHER UNUSUAL SITUATIONS**
1. Hijack procedures
2. Bomb threat procedures
3. Security coordinator responsibilities
4. Inflight intercept signals and procedures

EMERGENCY DRILL TRAINING (Note 1)

A. **HANDHELD FIRE EXTINGUISHERS**
1. Inspection tags, dates, and proper charge levels
2. Removal and storage of extinguishers
3. Actual discharge of each type of extinguisher
4. Maintenance procedures and MEL

B. **PORTABLE OXYGEN SYSTEMS**
1. Inspection tags, dates, and pressures
2. Removal and storage of oxygen bottles
3. Actual operation of each type of bottle and each type of mask

C. **EMERGENCY EXITS AND SLIDES**

1. Actual operation (open and close) of each exit in the normal and emergency modes
2. Instruction on slide or slide raft deployment, transfer from one door to another, and detachment from the aircraft (or training device) of each type of slide or slideraft (if applicable)
3. Actual use of slide or slide raft (this requirement needs to be accomplished only once during initial new-hire or initial equipment training)

D. **DITCHING EQUIPMENT** (IF APPLICABLE)

1. Actual donning, use, and inflation of individual flotation means (life preservers)
2. Instruction on life raft removal from the aircraft and inflation of each type of life raft
3. Instruction on the use of life lines
4. Actual boarding of a life raft or slide raft
5. Instruction on survival equipment

Note 1 : The emergency drill training modules, which require the crewmember to actually operate the items of emergency equipment (hands-on), must be conducted at least every 24 months. During the alternate 12-month periods, the emergency drill training may be accomplished by pictorial presentation or demonstration.

LESSON PLAN: **AIRCRAFT GROUND**

OBJECTIVE: To develop the necessary crewmember knowledge for understanding the basic functions of aircraft systems, the use of the individual systems components, the integration of aircraft systems, and operational procedures.

INSTRUCTIONAL DELIVERY METHODS: Lecture/Computer Training

TESTING/CHECKING: Written or Oral exam

GENERAL OPERATIONAL SUBJECTS

A. **FLIGHT LOCATING PROCEDURES** (Reference OPS Manual, Flight Plans)
1. In country procedures
2. International Procedures
   a. Initial Flight Planning
   b. Enroute Procedures
   c. Arrival Procedures
   d. Communications
   e. Navigation

B. **WEIGHT AND BALANCE**
1. Company procedures
2. Company forms

C. **ADVERSE WEATHER PRACTICES**
1. Icing
2. Turbulence
3. Thunderstorms with associated windshear and microburst phenomena
5. Low visibility
6. Contaminated runways

D. **COMMUNICATION AND NAVIGATION EQUIPMENT**
1. Company communication requirements
2. ATC clearance requirements
3. Area departure and arrival requirements
4. Enroute requirements
5. Approach and landing requirements

E. **PERFORMANCE CHARACTERISTICS DURING ALL FLIGHT REGIMES**

1. The use of charts, tables, tabulated data and other related manual information including the Airplane Flight Manual
2. Normal, abnormal, and emergency performance problems including fuel consumption and cruise control
3. Meteorological and weight-limiting performance factors (such as temperature, pressure, contaminated runways, precipitation, climb/runway limits)
4. Inoperative equipment performance limiting factors (such as MEL/CDL, inoperative anti-skid)
5. Special operational conditions (such as unpaved runways, high altitude airports, drift down requirements, and Land and Hold Short Operations Procedures)

F. **GROUND DEICING/ANTI-ICING** (IF APPLICABLE)

1. Introduction
2. Airplane surface contamination recognition
3. "Critical Area" determination, inspection, and check procedures
4. Effects of contamination and fluids on performance and flight characteristics
5. Airplane deicing/anti-icing procedures
6. Types and characteristics of deicing/anti-icing fluids
7. Use of holdover times
8. Communications
9. Cold weather preflight inspection procedures

AIRCRAFT SYSTEMS

A. **AIRCRAFT GENERAL**
1. Dimensions
2. Turning radius
3. Panel layouts
4. Cockpit and cabin configurations
5. Other major systems and components or appliances

B. **POWERPLANTS**
1. Basic engine description
2. Engine thrust rating
3. Accessory drives
4. Ignition
5. Oil system
6. Fuel control
7. Propeller (if applicable)
8. Bleed air (if applicable)
9. Reverse thrust (if applicable)

C. **ELECTRICAL**
1. Generators
2. APU generators (if applicable)
3. External power
4. Electrical system schematic
   a. Buses
   b. Circuit breakers
   c. Fuses
5. Battery
6. Other standby power systems

D. **HYDRAULIC** (IF APPLICABLE)
1. Reservoirs
2. Pumps
3. Accumulators
4. Hydraulic system schematic
5. Filters
6. Check valves
7. Interconnects
8. Actuators
9. Hydraulically operated components

E. **FUEL**
1. Fuel tanks
2. Pumps (engine-driven and boost pumps)
3. Valves
4. Fuel system schematic
5. Cross feeds
6. Quantity indicators
7. Fuel jettison (if applicable)

F. **PNEUMATIC** (IF APPLICABLE)
1. Bleed air sources (such as engines, APU, or external ground air).
2. Bleed air system schematic
3. Valves
4. Ducts
5. Chambers
6. Temperature and pressure limiting devices

G. **AIR CONDITIONING AND PRESSURIZATION** (IF APPLICABLE)
1. Heaters
2. Air conditioning packs
3. Fans
4. Environmental control devices
5. Pressurization system schematic
6. Outflow and negative pressure relief valves
7. Automatic, standby, and manual pressurization controls and annunciators

H. **FLIGHT CONTROLS**
1. Primary controls (yaw, pitch, and roll devices)
2. Secondary controls (leading/trailing edge devices, flaps, trim, and damping mechanisms)
3. Means of actuation (direct/indirect or fly-by-wire)

I. **LANDING GEAR**
1. Landing gear system schematic
2. Extension and retraction mechanism
3. Operating sequence of struts, doors, and locking devices
4. Brake system
5. Anti-skid system (if applicable)
6. Nose wheel steering (if applicable)
7. Air/ground sensor relays
8. Visual downlock indicators

J. **ICE AND RAIN PROTECTION** (IF APPLICABLE)
1. Rain removal systems
2. Anti-icing and deicing systems
    a. Wings
    b. Flight controls
    c. Engines
    d. Pitot-static probes
    e. Fluid outlets
    f. Cockpit windows
    g. Aircraft structures
3. Systems schematics
4. Pneumatic/electrical valves
5. Sensors
6. Ducts
7. Electrical elements
8. Pneumatic devices

K. **EQUIPMENT AND FURNISHINGS**
1. Exits
2. Galleys (if applicable)
3. Water and waste systems (if applicable)
4. Lavatories (if applicable)
5. Cargo areas
6. Crewmember and passenger seats
7. Bulkheads
8. Seating and/or cargo configurations
9. Non emergency equipment and furnishings

L. **NAVIGATION EQUIPMENT**
1. Flight director (if applicable)
2. Horizontal situation indicator (if applicable)
3. Radio magnetic indicator (if applicable)
4. Navigation receivers
    a. ADF
    b. VOR
    c. OMEGA (IF APPLICABLE)
    d. LORAN-C (IF APPLICABLE)
    e. RNAV (IF APPLICABLE)
    f. MARKER BEACON
    g. DME
    h. INERTIAL NAVIGATION SYSTEM (IF APPLICABLE)
5. Functional displays
6. Fault indications
7. Comparator systems (if applicable)
8. Transponder
9. Radio altimeter (if applicable)

10. Weather radar (if applicable)
11. CRT or computer operated displays (if applicable)

M. **AUTO FLIGHT SYSTEM**
1. Autopilot
2. Automatic navigation tracking (VOR,RNAV)
3. Automatic approach tracking

N. **FLIGHT INSTRUMENTS**
1. Overview of panel arrangement
2. Sources of power (electrical, pneumatic, pitot-static, and alternate sources
3. Attitude indicator
4. Heading indicator
5. Airspeed indicator
6. Vertical speed indicator
7. Altimeter
8. Standby flight instruments (if applicable)
9. TCAS (if applicable)

O. **COMMUNICATIONS EQUIPMENT**
1. VHF/HF radios
2. Audio panels
3. Interphone or passenger address systems (if applicable)

P. **WARNING SYSTEMS**
1. Aural, visual, and tactile warning systems
   a. Character and degree of urgency related to signal
2. Warning and caution annunciator systems

Q. **FIRE PROTECTION** (IF APPLICABLE)
1. Visual and/or aural indications of fire or overheat
   a. Overheat sensors
   b. Loops
   c. Modules
2. Procedures
   a. Use of fire handles
   b. Automatic extinguishing systems
   c. Agents
3. Power sources necessary to provide protection for fire and overheat conditions in the following:
   a. Engines
   b. APU
   c. Cargo bay/wheel well
   d. Cockpit
   e. Cabin
   f. Lavatories

1. Passenger system
2. Crew system
3. Portable system
4. Oxygen system schematic
5. Automatic deployment systems
6. Regulators
7. Pressure levels
8. Gauges
9. Servicing requirements

S. **LIGHTING**
1. Cockpit
2. Cabin
3. External
4. Power sources
5. Switches
6. Spare bulbs

T. **EMERGENCY EQUIPMENT**
1. Type (oxygen bottles, first air kits, liferafts, life preservers, crash axes, and emergency exits and lights)
2. Location of each
3. Purpose of each

U. **AUXILIARY POWER UNIT** (APU) (IF APPLICABLE)
1. Installation
2. Inlet doors
3. Exhaust ducts
4. Fuel supply
5. Description of how it interfaces with electrical and pneumatic systems

AIRCRAFT SYSTEMS INTERGRATION

A. **USE OF CHECKLIST**
   1. Safety checks
   2. Cockpit preparation
   3. Checklist callouts and responses
   4. checklist sequence

B. **FLIGHT PLANNING**
1. Performance limitations
   a. Meteorological
   b. Weight
   c. MEL/CDL items
2. Required fuel loads
3. Weather planning
   a. Lower than standard takeoff minimums (if applicable)
   b. Alternate requirements

C. **DISPLAY SYSTEMS**
1. Weather radar (if applicable)
2. Other CRT displays (if applicable)
   a. Checklist
   b. Vertical navigation
   c. Longitudinal navigation
   d. TCAS (if applicable)

D. **NAVIGATIONAL SYSTEMS**
   1. Preflight preparation
   2. Operation
   3. Flight planning requirements

E. **AUTOFLIGHT**
   1. Autopilot preflight/setup/modes
   2. Flight Director preflight/setup/modes
   3. Normal and abnormal indications
   4. Annunciators

F. **COCKPIT FAMILIARIZATION**
1. Activation of aircraft systems controls and switches
   a. Normal
   b. Abnormal
   c. Emergency
2. Annunciators
   a. Lights
   b. Other caution and warning systems

G. **COCKPIT RESOURCE MANAGEMENT**

1. Communication
   a. Cultural influences
   b. Position
   c. Assertiveness
   d. Participation of all crewmembers
   e. Cockpit-cabin crew coordination
   f. Legitimate ways of expressing dissent
2. Situation Awareness
   a. Reality versus perceptions of reality
   b. Fixation
   c. Monitoring
   d. Incapacitation
3. Problem Solving/Decision Making/Judgement
   a. Conflict resolution
   b. Review
4. Team Management
   a. Team building
   b. Managerial skills
   c. Authority
   d. Barriers
   e. Workload management
5. Stress Management
   a. Fitness to fly
   b. Fatigue
   c. Incapacitation
6. Team Review
   a. Premission analysis and planning
   b. Critique
   c. Ongoing review
   d. Postmission
7. Intepersonal Skills
   a. Listening
   b. Conflict resolution

LESSON PLAN:

FLIGHT TRAINING CURRICULUM SEGMENT
PIC/SIC
Transport Category

OBJECTIVE: To develop the necessary crewmember skills and knowledge to perform the duties and responsibilities for the duty position and operate the aircraft to the desired standards.

INSTRUCTIONAL DELIVERY METHOD: Instruction/Demonstration/Practice

TESTING/CHECKING: Evaluation, Progress check

A. **PREPARATION**
1. Visual inspection
2. Prestart procedures
3. Performance limitations

B. **SURFACE OPERATION**
1. Starting
2. Taxi
3. Pretakeoff checks

C. **TAKEOFF**
1. Normal
2. Crosswind
3. Rejected
4. Powerplant failure V_1
5. Powerplant failure during second segment
6. Lower than standard minimum

D. **CLIMB**
1. Normal
2. One-engine inoperative during climb to en route altitude

E. **EN ROUTE**
1. Steep turns
2. Inflight powerplant shutdown
3. Inflight powerplant restart
4. High speed handling characteristics

F. **DESCENT**
1. Normal
2. Maximum rate

G. **APPROACHES**

1. VFR procedures
   a. Visual approach
   b. With 50% loss of power on one side
   c. With slat/flap malfunction
2. IFR precision approaches
   a. ILS/normal/DME
   b. ILS/one-engine inoperative
3. IFR nonprecision approaches
   a. NDB/normal/DME
   b. VOR/normal/DME
   c. Nonprecision approach one-engine inoperative
   d. LOC/backcourse/DME procedures
   e. SDF/LDA/DME procedures
   f. ASR procedures
   g. Circling approach
   h. Missed approach
      NOTE: At least one MAP must be a complete approved procedure.
      i. From precision approach
      ii. From nonprecision approach
      iii. With a powerplant failure

H. **LANDINGS**

1. Normal
2. With pitch mistrim
3. From precision instrument approach
4. From precision instrument approach with most critical engine inoperative
5. With 50% power loss on one side
6. With flap/slat malfunction
7. Crosswind
8. With manual reversion/degraded control augmentation
9. Rejected

I. **AFTER LANDING**

1. Parking
2. Emergency evacuation

J. **OTHER FLIGHT PROCEDURES DURING ANY AIRBORNE PHASE**

1. Holding
2. Ice accumulation on airframe
3. Air hazard avoidance
4. Windshear/microburst

LESSON PLAN:

FLIGHT TRAINING CURRICULUM SEGMENT
PIC/SIC
Multiengine General Purpose

OBJECTIVE: To develop the necessary crewmember skills and knowledge to perform the duties and responsibilities for the duty position and operate the aircraft to the desired standards.

INSTRUCTIONAL DELIVERY METHOD: Instruction/Demonstration/Practice

TESTING/CHECKING: Evaluation, Progress check

A. **PREPARATION**
1. Visual inspection
2. Pretaxi procedures
3. Performance limitations

B. **SURFACE OPERATION**
1. Cockpit management
2. Securing cargo
3. Starting
4. Taxi
5. Pretakeoff checks

C. **TAKEOFF**
1. Normal
2. Crosswind
3. Short/soft field
4. Vmc demonstration and recovery
5. Powerplant failure before Vmc (rejected)
6. Powerplant failure after Vmc
7. Lower than standard minimum

D. **CLIMB**
1. Normal
2. One-engine inoperative

E. **EN ROUTE**
1. Steep turns
2. Approaches to stalls:
   (takeoff config., en route config., landing config.)
3. Powerplant shutdown and restart

4. Slow speed handling characteristics
5. With a powerplant inoperative

F. **DESCENT**
1. Normal
2. Maximum rate

G. **APPROACHES**
1. VFR procedures
   a. Normal
   b. With 50% loss of power on one side
   c. With slat/flap malfunction
2. IFR precision approaches
   a. ILS/normal/DME
   b. ILS/one-engine inoperative
3. IFR nonprecision approaches
   a. NDB/normal/DME
   b. VOR/normal/DME
   c. Nonprecision approach one-engine inoperative
   d. LOC backcourse procedures/DME
   e. SDF/LDA procedures/DME
   f. ASR procedures
   g. Circling approach
   h. Missed approach
      NOTE: At least one MAP must be a complete approved procedure.
      i. From precision approach
      ii. From nonprecision approach
      iii. With a powerplant failure

H. **LANDINGS**
1. Normal
2. With pitch mistrim
3. From precision instrument approach
4. From precision instrument approach with most critical engine inoperative
5. With 50% power loss on one side
6. With flap/slat malfunction
7. Crosswind
8. Short/soft field
9. With manual reversion/degraded control augmentation

I. **AFTER LANDING**
1. Parking
2. Emergency evacuation

J. **OTHER FLIGHT PROCEDURES DURING ANY AIRBORNE PHASE**
1. Holding

2. Ice accumulation on airframe
3. Air hazard avoidance
4. Windshear/microburst

K. **SYSTEMS PROCEDURES DURING ANY AIRBORNE PHASE**
(Normal, abnormal, alternate)
1. Pneumatic pressurization
2. Air conditioning
3. Fuel and oil
4. Electrical
5. Hydraulic
6. Flight controls
7. Anti-icing and deicing systems
8. Autopilot
9. Flight management guidance systems and/or automatic or other approach & landing aids
10. Stall warning devices, stall avoidance devices, and stability augmentation systems
11. Airborne weather radar
12. Flight instrument system malfunction
13. Communications equipment
14. Navigation equipment

L. **SYSTEMS PROCEDURES TRAINING DURING ANY AIRBORNE PHASE** (Emergency)
1. Aircraft fires
2. Smoke control
3. Powerplant failure/fire
4. Electrical, hydraulic, pneumatic systems
5. Flight control systems malfunction
6. Landing gear and flap systems malfunction
7. Air hazard avoidance
8. Windshear/microburst

LESSON PLAN:

FLIGHT TRAINING CURRICULUM SEGMENT
PIC / SIC
Helicopter

OBJECTIVE: To develop the necessary crewmember skills and knowledge to perform the duties and responsibilities for the duty position and operate the aircraft to the desired standards.

INSTRUCTIONAL DELIVERY METHOD: Instruction/Demonstration/Practice

TESTING/CHECKING: Evaluation, Progress check

A. **PREPARATION**
1. Visual inspection
2. Pre-taxi procedures
3. Performance limitations

B. **SURFACE OPERATION**
1. Starting
2. Rotor engagement
3. Taxiing
4. Lift-to-hover IGE/OGE
5. Hover turns IGE/OGE
6. Sideward/rearward hovering
7. Slope operations
   a. Liftoff
   b. Landing
   c. Taxiing

C. **TAKEOFF**
1. Normal
2. Instrument
3. Obstacle clearance
4. Running (High altitude)
5. Category "A"
6. Category "A" with powerplant failure before CDP
7. Category "A" with powerplant failure after CDP
8. Rejected takeoff

D. **CLIMB**
   1. Normal
   2. Best rate
   3. Best angle

E. **EN ROUTE**
1. Medium-banked turns
2. Power plant shutdown and restart
3. Low speed characteristics
4. High speed characteristics

F. **DESCENT**
1. Normal
2. Maximum rate
3. Autorotative glide

G. **APPROACHES**
1. VFR procedures
   a. Normal
   b. Obstacle clearance
   c. High altitude
   d. Elevated landing site
   e. With degraded control augmentation
   f. Balked landing
2. IFR precision approaches
   a. ILS / normal / DME
   b. ILS / one-engine inoperative (if applicable)
3. IFR nonprecision approaches
   a. NDB / normal / DME
   b. VOR / normal / DME
   c. LOC back course procedures/DME
   d. SDF / LDA procedures/DME
   e. ASR procedures
   f. Circling approach
   g. Missed approach

   NOTE: At least one MAP must be a complete approved procedure.
   i. From precision approach
   ii. From nonprecision approach
   iii. With power plant failure (if applicable)

H. **LANDINGS**
1. Normal
2. Category "A"
3. Category "A" with simulated power plant failure after LDP
4. Crosswind
5. From precision instrument approach
6. From precision instrument approach with at least a 50% power deficiency
7. With degraded control augmentation

I. **AFTER LANDING**
1. Taxiing
2. Parking
3. Stopping the rotors
4. Emergency evacuation

J. **UNPREPARED SITE OPERATIONS**
1. Confined areas
2. Pinnacles
3. Ridgelines

K. **OTHER FLIGHT PROCEDURES DURING ANY AIRBORNE PHASE**
1. Holding
2. Ice accumulation on airframe
3. Air hazard avoidance
4. Windshear/microburst

M. **SYSTEMS PROCEDURES DURING ANY AIRBORNE PHASE**
(Normal, abnormal, alternate)
1. Pneumatic pressurization
2. Air conditioning
3. Fuel and oil
4. Electrical
5. Hydraulic
6. Flight controls
7. Anti-icing and deicing systems
8. Auto flight systems
9. Flight management and guidance systems
10. Automatic or other approach & landing aids
11. Loss of anti-torque effectiveness
12. Airborne weather radar
13. Flight instrument system malfunction
14. Communications equipment
15. Navigation equipment

N. **SYSTEMS PROCEDURES TRAINING DURING ANY AIRBORNE PHASE** (Emergency)
1. Aircraft fires
2. Smoke control
3. Powerplant malfunctions
4. Electrical, hydraulic, pneumatic systems
5. Flight control systems malfunction
6. Landing gear malfunctions
7. Anti-torque failure
8. Settling-with-power

LESSON PLAN: **CARRIAGE HAZARDOUS MATERIALS**

OBJECTIVE: The objective of this curriculum segment is to ensure that each certificate holder that elects to accept and transport hazardous materials adequately trains each crewmember employee who would have a responsibility involving the acceptance, handling, or transportation of hazardous materials in the requirements of 49 CFR Parts 171, 172, 173, and 175 and the International Civil Aviation R-0anization (ICAO), Technical Instructions for the Safe Transport of Dangerous Goods by Air, and the following training objectives are met:

A. Ensure that each employee knows and understands the provisions of 49 CFR Parts 171, 172, 173, and/or ICAO technical instructions as they pertain to the employee's job.

B. Ensure that only those hazardous material shipments that comply with 49 CFR Parts 172 and 173 are accepted/transported.

C. Ensure that employees know and can apply handling, storage, and loading requirements for hazardous materials. (49 CFR Part 175).

D. Ensure that employees know and can apply reporting and safety requirements concerning discovery of hazardous materials discrepancies or incidents.

INSTRUCTIONAL DELIVERY METHOD: Lecture, Computer Training Systems

TESTING/CHECKING: Written exam

I. **INITIAL TRAINING**

A. **General hazardous materials information** (approximately 2 hours).

1. Responsibilities (171.1, 171.2, and 173.3).
2. Definitions and classifications (171.8 and Part 173).
3. Use and application of the Hazardous Materials Table (172.101).
4. ICAO Part 1.

B. **Communications Requirements** (approximately 2 hours).

1. Shipping papers/certification (172.200-172.204).
2. Package/Marking (172.300-172.338), (173.1-173.27).
3. Labeling/Placarding (172.400-172.512, and 175.40).
4. ICAO Part 4.

C. **Handling** (approximately 2 hours).

1. Acceptance and inspection of shipment (175.30-175.31, and 175.45).
2. Notification of Pilot (175.33-175.35).
3. Handling, storage, and loading (175.75-175.90).
4. Special Handling.
   a. Vehicles (175.305).
   b. Poison (175.630).
   c. Asbestos (175.640).
   d. Radioactive (175.700-175.703).
   5. Company Procedures.

D. **Exception/Exemptions** (approximately 1 hour).

1. Exceptions (175.10-175.310, and 175.320).
2. Exemptions (107.101-107.115) and Appendices A and B.
3. Company Procedures.

E. **Reporting/Signs Requirements** (approximately 1 hour).

1. Discrepancies (175.31).
2. Incidents (175.45 and 171.16).
3. Passenger operators only (175.25).
4. Company Procedures.

II. **RECURRENT TRAINING**

A. General hazardous materials information.

B. Communications Requirements (approximately 1 hour for A and B).

C. Handling.

D. Exception/Exemptions (approximately 1 1/2 hours for C and D).

E. Reporting/Signs Requirements (approximately 1/2 hour)

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TABLE OF MANUAL DISTRIBUTION

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MANUAL	WHO HAS THIS MANUAL	DATE OUT	DATE BACK
Master	Director of Operations – Joseph Rice		
FAA	Portland FSDO – Tim Moon		
1	Chief Pilot – Steve Metheny		
2	Grants Pass Office – Tami Hutchison		
3	Spare		

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INTRODUCTION

1.1. USE OF THIS MANUAL

This document is only one aspect of the total aircrew training program. This volume incorporates curriculum for the various categories and duty positions, specific curriculum segments and various subject modules supporting those segments. The definitions for curriculum segments and subject modules, as used in this manual, may be found in Section 1. While the curriculum gives guidance as to the general areas of study required by the crewmember, the subject modules provide detailed information on the subjects to be presented.

This specific manual provides a ***framework*** for the standardization of the aircrew training program; it is the standard and is directive in nature. Instructors will make and follow their lesson plans based on the approved subject module. Improvements to the lesson plans are encouraged.

Designated employees must undergo Basic Indoctrination. After Indoctrination is completed, one need only define the category of the individual and his duty position, and find it in the curriculum in Section 3. From there, follow the curriculum to the curriculum segments which will detail the instruction required, prerequisites, and suggested times. For example, for an initial new hire PIC/SIC:

1. Go to Section 3, Categories of Training Table; determine training required.
2. Find the desired Category of Training for duty position and specific aircraft.
3. Locate those Curriculum Segments applicable to the category of training curriculum desired in Section 4.

Each training curriculum lists the Curriculum Segments that must be completed prior to pilot qualification. Within the Curriculum Segments are Subject Modules containing the descriptive information to be covered.

Recordkeeping is an integaral part of training. Without adequately documented records, training never took place. This manual has one chapter (Section 6) devoted to the records needed to properly document all phases of the company AIRCREW TRAINING PROGRAM. If there is a more expedient method of recording training activities, bring it to the attention of the Chief Pilot. Changes are encouraged.

1.2. GENERAL INFORMATION REGULATIONS

Under the provisions of FAR 135, Subpart H, it is the responsibility of the operator to develop a training program in order to enhance safety and standardization. This manual, when implemented, fulfills the provision of a training program as required under FAR 135.341: Pilot and Flight Attendant Crewmember training programs; recurrent training as required under FAR 135.351: Recurrent Training; and of course, FAR 135.323: training program: General.

Under the provisions of FAR 135.343: Crewmember Initial and Recurrent Training, there is a requirement that, "No certificate holder may use a person, nor may any person serve, as a crewmember in operations under this part unless that crewmember has completed the appropriate initial or recurrent training phase of the training program appropriate to the type of operation in which the crewmember is to serve since the beginning of the 12th calendar month before that service."

There is a similar provision in FAR 135.333(a) where no person may be assigned any duties or responsibilities pertaining to Hazardous Materials unless "... within the preceding 12 calendar months that person has satisfactorily completed initial or recurrent training in an appropriate training program established by the certificate holder,..."

Note, however, the provisions of FAR 135.323(b), "Whenever a crewmember who is required to take recurrent training under this subpart completes the training in the calendar month before, or the calendar month after, the month in which that training is required, the crewmember is considered to have completed it in the calendar in which it was required."

One purpose of this aircrew training program is to provide information and impart skills to pilots leading to the checks required under FAR 135.293, .297 or .299. Testing and checking determines whether learning has occurred. In that light, tests will be administered throughout the aircrew training program. Initial approval of this manual and program will be indicated by letter and signed by the FAA Principal Operations Inspector. Final approval of this manual and program must be obtained within 24 months from the date of initial approval and will be indicated by an appropriate stamp on each page signed by the FAA Principal Operations Inspector on each approved curriculum and/or curriculum segment.

1.3. APPLICABILITY

This document sets forth the standards and requirements for the establishment and maintenance of an approved training program for crew members, flight instructors and other applicable operations personnel employed by or under contract to CARSON HELICOPTER SERVICES, INC.

All training will be conducted at the direction of the Chief Pilot or his designated representative. The Chief Pilot will be responsible for administering all tests, be they written or oral.

1.4. TRAINING OBJECTIVE

At the conclusion of any category training curriculum, the individual involved will be able to successfully demonstrate his knowledge of the regulations, polices, and procedures applicable to the specific block of instruction by correctly answering 80 percent of the questions on written tests (oral tests in lieu of written tests may be conducted when approved by the Principal Operations Inspector). In relation to flight checks, the pilot will be able to fly the aircraft within the standards set by the Practical Test Standards (PTS) for the certificate required to be held in the particular type of operation.

1.5. TRAINING SYLLABUS

The ground training syllabus as outlined under the various category curricula provides an ordered listing of the required ground training subjects including emergency training for each aircraft type. Flight training is incorporated within that same category curriculum. Each curriculum is a guide and should be treated as such. If there is need to modify the curriculum for a specific situation, it should be accomplished, however, in all situations the required subjects must be covered.

1.6. FACILITIES

Training will be conducted in the training room at CARSON HELICOPTER SERVICES, INC. The room can comfortably seat five (5) students and is equipped with a reference library and chalkboard.

Other training aids include: when necessary, a video tape playback unit as well as audio visual aids and **COMPUTER TRAINING SYSTEMS**.

1.7. COURSEWARE

A. A listing of training materials made available to each student can be found in the appendix under, Training Materials.

B. Specific lesson plans are not contained in this manual. The Chief Pilot has lesson plans available for each subject matter.

A reference library is maintained by CARSON HELICOPTER SERVICES INC. A list of material used in the aircrew training program and contained in the library are listed in the appendix under: Reference Listing.

1.8. COMPUTER TRAINING SYSTEMS

A Computer training program will be used for Initial and Recurrent training; it will cover the mandatory subject modules for Ground Training as well as Aircraft Ground Training. **A score of 80%** will be required as a passing grade for all examinations.

CARSON HELICOPTER SERVICES recognizes the problem associated with training of a new pilot. While many are relatively new to commercial aviation, some have considerable commercial experience, to include, on occasion, experience in the type of aircraft commonly operated by CARSON HELICOPTER SERVICES,INC.

In the case of those pilots previously trained and current under another certificate holder, credit may be granted for the ground and flight training requirements of this program providing verification by the previous employer. This must include ground and flight training certificates, emergency and hazardous materials training, and a copy of the proficiency check. This documentation will be submitted to the POI requesting approval of the transfer of credit for training received.

1.9. QUALIFICATION REQUIREMENTS

No person will be assigned duties as a pilot until the following requirements as appropriate have been completed :

A. In accordance with FAR 135.331, each pilot will undergo emergency training on the type and model aircraft he is to fly.

B. The pilot must have successfully completed a course on the transportation and handling of Hazardous Materials in accordance with FAR 135.333.

C. Ground training, in accordance with FAR 135.345, must have been successfully completed.

D. He must have successfully passed an oral or written examination within the past twelve (12) calendar months conducted by an authorized check airman or FAA inspector as stipulated in FAR 135.293(a).

E. In accordance with paragraph (b) of FAR 135.293, he must successfully complete a flight test administered in the class of aircraft to be flown by an authorized check airman of FAA inspector.

F. In order to function as a pilot in command, it is necessary that an enroute qualification check be conducted within the preceding twelve (12) months as prescribed in FAR 135.299.

G. If applicable, the pilot must have successfully passed a proficiency check conducted under the provisions of FAR 135.297.

H. Candidates for company instructor pilots or check airmen must meet the requirements of FAR 135.337.

I. Training subjects that apply to more than one aircraft or crewmember during previous training while employed by the company for another aircraft or another crewmember position, need not be repeated during subsequent training other than recurrent training.

1.10. PROGRAMMED FLIGHT TRAINING HOURS – REDUCTION

A flight crewmember will complete a flight training curriculum segment by successfully accomplishing each training event and the specified number of training hours. Flight crewmembers are then required to successfully meet the requirements specified in the Qualification Segment. If a student fails to meet any of the qualification requirements because of a lack in flight proficiency, he/she must be returned to training status. After additional training, an instructor recommendation is required for accomplishing the unsatisfactory qualification requirement.

A flight crewmember may successfully complete a flight training curriculum segment without completing the specified number training hours provided all of the following are met: (**ref. FAA Order 8400.10 Volume 3, Para. 471**)

1. The crewmember successfully completes all of the training events required by the curriculum segment.

2. An instructor recommends the flight test be conducted before completion of the specified number of training hours. The recommendation must be documented.

3. The crewmember satisfactorily completes the qualification curriculum segment requirements. If a flight crewmember fails to meet the qualification curriculum segment requirements because of lack in flight proficiency, he/she must complete all training hours specified. The crewmember must then be recommended by an instructor before accomplishing the failed qualification requirements.

1.11. INSTRUCTORS/CHECK AIRMEN

A. No person may serve as a flight instructor in the AIRCREW TRAINING PROGRAM unless that person:

1. Holds the airman certificate and ratings that must be held to serve as a pilot in command for that type of operation.

2. Has satisfactorily completed the appropriate training phases for the aircraft, including recurrent training, which would qualify the individual to serve as pilot in command.

3. Has satisfactorily completed the appropriate proficiency or competency checks required to serve as pilot in command.

4. Has satisfactorily completed the applicable training requirements of FAR 135.339.

5. Holds a current Class I or Class II medical certificate.

6. Has been designated by the Company to perform as a flight instructor.

B. Ground training will be conducted at the direction of the Chief Pilot or his designated representative. The Chief Pilot will be responsible for administering all tests--be they written or oral--to company flight instructors (if FAA approved).

1.12. DEFINITIONS.

The following terms are used throughout this training manual and are defined as follows:

AIRCREW TRAINING PROGRAM: A system of instruction which includes curriculums, facilities, instructors, check airmen, courseware, instructional delivery methods, and testing and checking procedures. This system must satisfy the training program requirements of FAR Part 135 and ensure that each crewmember remains adequately trained for each aircraft, duty position, and kind of operation in which the person serves.

Curriculum: A complete training agenda specific to an aircraft type and a crewmember or dispatcher duty position. Each curriculum consists of several curriculum segments.

Curriculum Segment: An integral phase of a curriculum which can be separately evaluated and individually approved but by itself does not qualify a person for a crewmember duty position. Each curriculum segment consists of one or more training modules.

Training Module: An integral part of a curriculum segment which contains descriptive information, elements, or events which relate to a specific subject. For example, a ground training curriculum segment must have training modules (composed of “elements”) pertaining to aircraft systems (hydraulic, pneumatic, electrical, etc.). As another example, a flight training curriculum segment must have training modules (composed of “events”) pertaining to normal, abnormal, and emergency procedures. A training module includes the outline, appropriate courseware, and the instructional delivery methods. It is usually completed in a single training session.

Courseware: Instructional material developed for each curriculum. This is information in lesson plans, instructor guides, computer software programs, audiovisual programs, workbooks, aircraft operating manuals, and handouts. Courseware must accurately reflect curriculum requirements, be effectively organized, and properly integrate with instructional delivery methods.

1.13. INSTRUCTIONAL DELIVERY METHODS

Methodology for conveying information to a student. For example, this may include lectures, demonstrations, audiovisual presentations, home study assignments, workshops, and drills. Training devices, simulators, aircraft, and **computer work stations** are also considered instructional delivery methods.

Eligibility Period: Three calendar months (the calendar month before the "training/checking month," the "training/checking month," and the calendar month after the "training/checking" month). During this period a crewmember or aircraft dispatcher must receive recurrent training, a flight check, or a competency check, to remain in a qualified status. Training or checking completed during the eligibility period, is considered to be completed during the "training/checking month."

SECTION 3

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3.1. CATEGORIES OF TRAINING

Categories of training: Courses of training which provide the necessary training and checking or testing for various types of crewmembers who have not previously qualified (or have or will become unqualified) to serve unsupervised in specific duty positions. Each category of training consists of one or more curriculums.

Initial New-Hire: This category is for personnel who have had no previous experience with the operator. However, it also applies to personnel employed by the operator who have not previously held a crewmember training duty position with that operator. Initial New Hire Training includes basic indoctrination and training for a specific duty position and aircraft type. The training for a specific duty position and aircraft type is equivalent to Initial Equipment Training and is a major component of Initial New Hire Training. Initial New Hire Training must be the most comprehensive training herein defined as it is the first exposure to specific company methods.

Initial Equipment Training: This category of training is for personnel who have been previously trained and qualified for a duty position by the operator (not a new hire) and are being reassigned.

As an example:

The crewmember is being reassigned to a duty position on a different aircraft type when the crewmember has not been previously trained and qualified by the operator for that duty position and aircraft type.

Transition Training: This category of training is for personnel who have been previously trained and qualified for a specific duty position by the operator and are being re-assigned to the same duty position on a different aircraft type.

Upgrade Training: This category of training is for personnel who have been previously trained and qualified in a duty position by the operator and are being reassigned to another duty position on which they were previously trained and qualified.

Recurrent Training: This category of training is for personnel who have been trained and qualified by the operator and will continue to serve in the same duty position and aircraft type and must receive recurring training or checking within an appropriate eligibility period to maintain currency.

Re-qualification Training: This category of training is for personnel who have been trained and qualified by the operator, but have not worked in this duty position and/or aircraft for a period of 120 days due to not receiving recurrent training and/or a required flight or competency check within the appropriate eligibility period.

AIRCRAFT FAMILIES

There are four basic families of aircraft used in Part 135 operations. Aircraft are assigned to a particular family according to their performance capabilities and flight characteristics. The ground and flight training requirements for crewmembers are significantly different for each family of aircraft. Within each aircraft family, however, the ground and flight training requirements are similar, even though individual aircraft may be quite different in construction and appearance. The four families of aircraft are as follows:

A. **Transport Category and Commuter Category Airplane/Helicopter Family**. This family includes all multiengine land airplanes certificated under Part 25 (and predecessor rules such as CAR 4, 4A and 4B and SR 422, 422A, and 422B) and also includes the commuter category provisions of Part 23 (and SFAR 41).

B. **Multiengine General Purpose Airplane Family**. This family includes all multiengine land and airplanes certificated under Part 23, CAR 3, or Aero Bulletin 7A (other than the commuter category provisions of Part 23). It does not include any airplanes belonging to the transport or commuter category airplane family.

C. **Single-Engine General Purpose Airplane Family**. This family includes all single-engine airplanes.

D. **Helicopter Family**. This family includes all helicopters.

3.2. CATEGORIES OF TRAINING TABLE

This table illustrates categories of training for personnel being assigned to either a different duty position and/or a different aircraft type.

ASSIGNED DUTY POSITION

	PIC (A)	PIC (B)	PIC (C)	PIC D)
PIC A	R*	T	R	I
PIC B	T	R*	I	R
PIC C	U	I	R*	T
PIC D	I	U	T	R*

CURRENT DUTY POSITION REQUIRED CATEGORIES OF TRAINING

I = Initial Equipment Training
T= Transition Training
U= Upgrade Training
R= Recurrent Training
R*= Re-qualification required if person has become Unqualified, also referred to as Recurrent Training

Table Key

PIC = Pilot in Command
SIC = Second in Command
(A) = A specific aircraft type (different from B)
(B) = A specific aircraft type (different from A)

Example:

1. **Current duty position is SIC on aircraft Type A. Person is assigned to PIC duty position on same aircraft type. Upgrade training is required.**

3.3. CURRICULUM: INITIAL NEW-HIRE PIC

AIRCRAFT: **SK-61**

OBJECTIVE: To train a new employee in company methods of compliance and operations procedures.

PRE-REQUISITES: No previous company experience.

TRAINING AIDS: Refer to individual curriculum segments.

TRAINING HOURS: 60

COMPLETION STANDARDS: Refer to qualification segment.

APPLICABLE CURRICULUM SEGMENTS:

		Training Hours
A.	BASIC INDOCTRINATION	16
B.	AIRCRAFT GROUND	
	1. General Subjects	8
	2. Sikorsky SK-61	32
C.	AIRCRAFT DIFFERENCES	
	1. SK-61N, R	2
D.	GENERAL EMERGENCY	4
E.	AIRCRAFT FLIGHT	
	1. Sikorsky SK-61	4
F.	NON-CARRIAGE HAZMAT	2
G	CARRIAGE HAZMAT	16

*NOTE: See supplemental curriculum segments and segment modules, Section 7.

3.4. CURRICULUM: INITIAL NEW-HIRE SIC

AIRCRAFT: **SK-61**

OBJECTIVE: To train a new employee in company methods of compliance and operations procedures.

PREREQUISITES: No previous company experience.

TRAINING AIDS: Refer to individual curriculum segments.

TRAINING HOURS: 56

COMPLETION STANDARDS: Refer to qualification segment.

APPLICABLE CURRICULUM SEGMENTS:

		Training Hours
A.	BASIC INDOCTRINATION	16
B.	AIRCRAFT GROUND	
	1. General Subjects	8
	2. Sikorsky SK-61	32
C.	GENERAL EMERGENCY	4
D.	AIRCRAFT FLIGHT	2
E.	NON-CARRIAGE HAZMAT	2
F.	CARRIAGE HAZMAT	16

*NOTE: See supplemental curriculum segments and segment modules, Section 7.

3.5. CURRICULUM: INITIAL EQUIPMENT SIC

AIRCRAFT**: SK-61**

OBJECTIVE: To train a person for reassignment of duty on a different aircraft.

PREREQUISITES: Previously trained with company for another duty position.

TRAINING AIDS: Refer to individual curriculum segments.

TRAINING HOURS: 42

COMPLETION STANDARDS: Refer to qualification segment.

APPLICABLE CURRICULUM SEGMENTS:

		Training Hours
A.	AIRCRAFT GROUND	
	1. General Subjects	4
	2. Sikorsky SK-61	32
B.	GENERAL EMERGENCY	2
C.	AIRCRAFT FLIGHT	
	1. Sikorsky SK-61	4

* NOTE: See supplemental curriculum segments and segment modules, Section 7.

3.6. CURRICULUM: TRANSITION TRAINING PIC

AIRCRAFT: **SK-61**

OBJECTIVE: To transition previously trained pilot to a new series/model aircraft.

PREREQUISITES: Previously trained with company for same duty position.

TRAINING AIDS: Refer to individual curriculum segments.

TRAINING HOURS: See below applicable aircraft GND/FLT training time.

COMPLETION STANDARDS: Refer to qualification segment.

APPLICABLE CURRICULUM SEGMENTS:

		Training Hours
A.	AIRCRAFT GROUND	
	1. General Subjects	4
	2. Sikorsky SK-61	32
B.	AIRCRAFT DIFFERENCES	
	1. SK-61N, R	2
C.	AIRCRAFT FLIGHT	
	1. Sikorsky SK-61	4

* NOTE: See supplemental curriculum segments and segment modules, Section 7.

3.7. CURRICULUM: UPGRADE TRAINING

AIRCRAFT: **SK-61**

OBJECTIVE: To upgrade previously trained SIC to PIC.

PREREQUISITES: Previously trained as SIC in series/model of aircraft.

TRAINING AIDS: Refer to individual curriculum segments.

TRAINING HOURS: 6

COMPLETION STANDARDS: Refer to qualification segment.

APPLICABLE CURRICULUM SEGMENTS:

		Training Hours
A.	*AIRCRAFT GROUND	4
B.	AIRCRAFT FLIGHT	2

* NOTE: See supplemental curriculum segments and segment modules, Section 7.

3.8. CURRICULUM: RECURRENT PIC

AIRCRAFT: **SK-61**

OBJECTIVE: To comply with appropriate FAR's in maintaining recurring training to maintain currency.

PREREQUISITES: Previously trained crewmember with company.

TRAINING AIDS: Refer to individual curriculum segments.

TRAINING HOURS: 6+ Applicable ACFT Model / FLT training time

COMPLETION STANDARDS: Refer to qualification segment.

APPLICABLE CURRICULUM SEGMENTS:

		Training Hours
A.	AIRCRAFT GROUND	
	1. General Subjects	2
	2. *Sikorsky SK-61	8
B.	AIRCRAFT DIFFERENCES	
	1. SK-61N, R	1
C.	GENERAL EMERGENCY	3
D.	**AIRCRAFT FLIGHT	2
E.	NON-CARRIAGE HAZMAT	1
F.	CARRIAGE HAZMAT	8

*NOTE: See supplemental curriculum segments and segment modules, Section 7.

** Denotes a Proficiency Check may be substituted for the recurrent flight training curriculum segment.

3.9. CURRICULUM: RECURRENT SIC

AIRCRAFT: **SK-61**

OBJECTIVE: To comply with appropriate FAR's in maintaining recurring training to maintain currency.

PREREQUISITES: Previously trained crewmember with company.

TRAINING AIDS: Refer to individual curriculum segments.

TRAINING HOURS: 16

COMPLETION STANDARDS: Refer to qualification segment.

APPLICABLE CURRICULUM SEGMENTS:

		Training Hours
A.	AIRCRAFT GROUND	
	1. General Subjects	2
	2. *Sikorsky SK-61	8
B.	GENERAL EMERGENCY	3
C.	**AIRCRAFT FLIGHT	2
D.	NON-CARRIAGE HAZMAT	1
E.	CARRIAGE HAZMAT	8

*NOTE: See supplemental curriculum segments and segment modules, Section 7.

** Denotes a Proficiency Check may be substituted for the recurrent flight training curriculum segment.

3.10. CURRICULUM: RE-QUALIFICATION PIC

AIRCRAFT: **SK-61**

OBJECTIVE: To re-qualify an employee whose eligibility has lapsed.

PREREQUISITES: Previously trained PIC under company program.

TRAINING AIDS: Refer to individual curriculum segments

TRAINING HOURS: 5+ Applicable GND / FLT Training Time.

COMPLETION STANDARDS: Refer to qualification segment.

APPLICABLE CURRICULUM SEGMENTS:

Time since eligibility period lapse will govern the training required:

Not more than 60 days ⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨ ⇩

2—6 Months ⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨ ⇩

7—12 Months ⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨ ⇩ ⇩

13—24 Months ⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨ ⇩ ⇩ ⇩

More than 24 Months ⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨⇨ ⇩ ⇩ ⇩ ⇩ ⇩

APPLICABLE CURRICULUM SEGMENTS:

A.	Aircraft Ground Training	NO	YES	YES	YES	YES
B.	Difference Training	NO	YES	YES	YES	NO
C.	General Emergency Training	NO	YES	YES	YES	YES
D.	Flight Training	NO	YES	YES	NO	NO
E.	Testing and Checking	NO	YES	YES	YES	YES
F.	Initial New-Hire Curriculum	YES	NO	NO	NO	NO

3.11. RE-QUALIFICATION CURRICULUM

		Training Hours
A.	AIRCRAFT GROUND TRAINING	
	1. General Subjects	2
	2. Sikorsky SK-61	8
B.	AIRCRAFT DIFFERENCES	
	1. SK-61N, R	1
C.	GENERAL EMERGENCY TRAINING	3
D.	FLIGHT TRAINING	1
E.	TESTING & CHECKING	2
	Total: 5+ Applicable ACFT MODEL/FLT Training Hours	

NOTE:

Re-qualification training is also applicable to PIC on the SK-61 who are being reassigned as SIC on the SK-61. Ground school will not be required as long as the crewmember has not lapsed from the eligibility period since initial and recurrent ground school are the same for PIC and SIC. Therefore, a PIC on the SK-61 being reassigned to SIC on the SK-61 is only required to receive **8** hours of training as well as testing and checking.

3.12. CURRICULUM: INITIAL AND TRANSITION – INSTRUCTOR/CHECK AIRMAN

AIRCRAFT: **SK-61**

OBJECTIVE: To train/ transition a current PIC as an instructor in the appropriate areas for instruction required.

PREREQUISITES:

1. Currently qualified as a company PIC under FAR 135.
2. Satisfactorily completed appropriate training phases (including recurrent)
3. Required to serve as PIC in this aircraft.
4. Satisfactorily completed the appropriate proficiency or competency checks required as a PIC under FAR 135.
5. Holds a current First or Second Class Medical certificate and Flight Instructor Rating.

TRAINING : Individual curriculum segments.

TRAINING HOURS: 15 HRS

COMPLETION STANDARDS: Refer to qualification segment.

Instructors must be observed and approved by the FAA.
Check Airmen have to be approved by the FAA.

APPLICABLE CURRICULUM SEGMENTS:

			Training Hours
A.	INST/ CHECK AIRMAN	GND	10
B.	INST/ CHECK AIRMAN	FLT	5

3.13. CURRICULUM: GROUND CREW TRAINING

OBJECTIVE: To familiarize personnel with company Ramp, Aircraft, and Flight operations procedures.

PREREQUISITES: No previous company experience.

TRAINING AIDS: Refer to individual curriculum segment.

TRAINING HOURS: 2

COMPLETION STANDARDS: Attendance of training.

APPLICABLE CURRICULUM SEGMENTS:

		Training Hours
A.	GROUND CREW TRAINING	2

SECTION 4

TABLE OF CONTENTS

4.1. FLIGHT TRAINING SYMBOL DEFINITIONS

The following are definitions of symbols used in the flight training curriculums to denote special requirements:

(PIC)	Denotes training events not requiring manipulation of the primary aircraft controls by the SIC, but emphasizing duties of the pilot-not-flying.
(M)	Denotes FAA policy requires detailed descriptions (or pictorial displays). These descriptions may be found in section 5.
#	Denotes certain optional training events not specifically required by regulations or operations specifications

4.2. BASIC INDOCTRINATION

OBJECTIVE: To enable a new employee to fully understand the scope company's history, it's structure and the services it provides.

INSTRUCTIONAL DELIVERY METHODS: Lecture, Discussion, Computer Training Systems

TRAINING AIDS: Operations Manual

COURSEWARE: FAR 135 company manual, FAR/AIM, Any other publications, charts, etc.

TRAINING HOURS: Refer to Section 3

TESTING/CHECKING: Written Quiz / Oral Quiz / Computer Test OPERATOR SPECIFIC:

A. DUTIES AND RESPONSIBILITIES

1. Company history, organization, and management structure
2. Operational concepts, policies, and kind of operation
3. Company forms, records, and administrative procedures
4. Employee standards and rules of conduct
5. Employee compensation, benefits, and contracts
6. Authority and responsibilities of duty position
7. Company required equipment

B. APPROPRIATE PROVISIONS OF THE FEDERAL AVIATION REGULATIONS

1. Flight crewmember certification, training, and qualification requirements
2. Medical certificates, physical examination, and fitness for duty requirements
3. Flight control requirements (flight -locating procedures)
4. Flight duty and rest requirements
5. Record keeping requirements
6. Operational rules in Parts 61, 91, and 135 and any other applicable regulations
7. Regulatory requirements for company manuals

C. CONTENTS OF CERTIFICATE AND OPERATIONS SPECIFICATIONS

1. Regulatory basis in Part 135 and the FAA Act of 1958
2. Definitions, descriptions, and organization of Operations Specifications
3. Limitations and Authorizations of Operations Specifications
4. Description of Certificate
5. Description of FAA Certificate Holding District Office and Responsibilities of FAA Principal Inspectors.

AIRMAN SPECIFIC:

A. COMPANY FLIGHT CONTROL

1. Flight locating system and procedures
2. Organization, duties, and responsibilities
3. Weather and NOTAM information

B. WEIGHT AND BALANCE

1. Definitions (such as zero-fuel weight, moments, and inches of datum)
2. General loading procedures and center of gravity computations
3. Effects of fuel burn and lead shifts in flight
4. Weight and balance forms, load manifests, fuel slips, and other applicable documents

C. AIRCRAFT PERFORMANCE

1. Definitions (such as balanced field, Vmc, obstruction planes, and maximum endurance)
2. Effects of temperature and pressure altitude
3. General TERPs criteria
4. Airport / terrain analysis system as appropriate to the type of aircraft
5. Wake turbulence

D. METEOROLOGY

1. Basic weather definitions (such as forecasts, reports, and symbols)
2. Temperature, pressure and winds
3. Atmosphere, moisture, and clouds
4. Air masses and fronts

5. Thunderstorms, icing and wind-shear
6. Reduced visibility including fog
7. Environmental Flight (mountains, etc.)

E. NAVIGATION

1. Dead reckoning and pilotage concepts and procedures
2. GPS

F. AIRSPACE AND ATC PROCEDURE

1. Definitions (such as precision approaches, and ATIS)
2. Description of airspace
3. Navigational performance and separation standards
4. Controller and pilots responsibilities
5. ATC communications procedures (normal and emergency)
6. Air traffic flow control

G. EN-ROUTE AND TERMINAL AREA CHARTING AND FLIGHT PLANNING

1. Terminology of charting services (such as Jeppesen, NOAA)
2. Takeoff minimums, landing minimums, and alternate requirements
3. General company flight planning procedures
4. Flight Service procedures
5. Airport diagrams

H. GROUND OPERATIONS

1. Ramp operations
2. Rotors in motion
3. Fueling Procedure
4. Rapid Refueling Procedures

4.3. GENERAL EMERGENCY

OBJECTIVE: For a crewmember to perform without error any of the emergency procedures identified below and follow through with appropriate action.

INSTRUCTIONAL DELIVERY METHOD: Lecture, Demonstration, Performance, Computer training systems

TRAINING AIDS: Reference Library, Operations Manual, Aircraft

COURSEWARE: Aircraft Flight Manuals

TRAINING HOURS: Refer to Section 3

TESTING/CHECKING: Written Quiz / Oral Quiz / Computer Test

The emergency training modules that are part of the recurrent general emergency training curriculum segment are identified by an asterisk

EMERGENCY SITUATION TRAINING

A: FLIGHT CREWMEMBER DUTIES AND RESPONSIBILITIES
1. Emergency assignments
2. Captain's emergency authority
3. Reporting incidents and accidents

B: CREW COORDINATION AND COMPANY COMMUNICATIONS
1. Cabin crew notification procedures
2. Ground agency notification procedures
3. Company communications procedures

*C: AIRCRAFT FIRES
1. Principles of combustion and classes of fires
2. Toxic fumes and chemical irritants
3. Use of appropriate hand-held extinguishers

* D: FIRSTAID EQUIPMENT
1. Contents and location of first aid kit
2. Requirements for first aid kit integrity
3. Use of individual items

E: ILLNESS, INJURY AND BASIC FIRST AID

1. Principles of CPR
2. Ear and sinus blocks
3. Seeking medical assistance
4. Treatment of shock
5. Heart attack situations

*F: GROUND EVACUATION

1. Aircraft configuration
2. Directing passenger flow
3. Blocked or jammed exit procedures
4. Fuel spills and other ground hazards
5. Handicapped persons
6. Fuel shut-off
7. Battery shut-off

*G: DITCHING

1. Cockpit and cabin preparation
2. Passenger briefing
3. Crew coordination
4. Primary swells, secondary swells, and sea conditions
5. Ditching heading and water landings
6. Ditching at night
7. Currents and channels

H: PREVIOUS AIRCRAFT ACCIDENTS / INCIDENTS

1. NTSB accident report reviews
2. Human factors/considerations
3. NASA reporting system
4. Crewmember Incapacitation
5. Company procedures
6. Reporting requirements
7. Interference with crewmembers

J: HIJACKING AND OTHER UNUSUAL SITUATIONS

1. Hijack procedures
2. Bomb threat procedures
3. Security coordinator responsibilities
4. In-flight intercept signals and procedures

EMERGENCY DRILL TRAINING

*A. HAND HELD FIRE EXTINGUISHERS

1. Inspection tags, dates, and proper charge levels
2. Removal and storage of extinguishers
3. Actual discharge of each type of extinguisher
4. Maintenance procedures

*B: EMERGENCY EXITS

1. Actual operation (open and close) of each exit in the normal and emergency modes

*C: DITCHING EQUIPMENT (IF APPLICABLE)

1. Actual donning, use, and inflation of individual flotation means (life preservers)
2. Instruction on survival equipment

Note 1: The emergency drill training modules, which require the crewmember to actually operate the items of emergency equipment (hands-on), must be conducted at least every 24 months. During the alternate 12-month periods, the emergency drill training will be accomplished by demonstration.

4.4. AIRCRAFT GROUND (SINGLE ENGINE)

OBJECTIVE: To familiarize any crewmember with the aircraft systems, avionics, power-plant and flight characteristics.

INSTRUCTIONAL DELIVERY METHODS: Lecture/Discussion, Computer Training Systems

TRAINING AIDS: Operations Manual/McDonnell Douglas Systems Book

COURSEWARE: Aircraft flight manual, Charts, Graphs

TRAINING HOURS: Refer to Section 3

TESTING/CHECKING: Oral Quiz / Hands-On Quiz / Computer Test

AIRCRAFT SPECIFIC:

A. AIRCRAFT SYSTEMS

A: AIRCRAFT GENERAL
1. Dimensions
2. Turning radius
3. Panel layouts
4. Cockpit and cabin configurations
5. Other major systems and components or appliances

B: POWERPLANTS
1. Basic engine description
2. Engine thrust rating
3. Accessory drives
4. Ignition
5. Oil system
6. Fuel control
7. Bleed air (if applicable)

C: POWERTRAIN AND DYNAMIC COMPONENTS
1. Rotor blades
    a. Main rotor blades
    b. Head
    c. Tail rotor
2. Transmissions and gearboxes
    a. Main transmissions
    b. Intermediate gearboxes
    c. Tail rotor gearboxes

3. Driveshafts
    a. Engine driveshafts
    b. Tail rotor driveshafts
    c. Clutches
    d. Rotor brakes

D: ELECTRICAL
1. Generators
2. External power
3. Electrical system schematic
    a. Buses
    b. Circuit breakers
    c. Fuses
4. Battery

E: FUEL
1. Fuel tanks
2. Pumps (engine-driven and boost pumps)
3. Valves
4. Fuel system schematic
5. Cross feeds
6. Quantity indicators

F: FLIGHT CONTROLS
1. Primary controls (yaw, pitch, and roll devices)
2. Secondary controls (leading/trailing edge devices, flaps, trim, and damping mechanisms)
3. Means of actuation (direct/indirect or fly-by-wire)

G: LANDING GEAR
1. Landing gear system schematic

H: EQUIPMENT AND FURNISHINGS

1. Exits
2. Cargo areas
3. Crewmember and passenger seats
4. Bulkheads
5. Seating and/or cargo configurations
6. Non emergency equipment and furnishings

I: NAVIGATION EQUIPMENT
1. Navigation receivers
2. Functional displays (GPS)
3. Fault indications
4. Transponder

J: FLIGHT INSTRUMENTS
1. Overview of panel arrangement
2. Sources of power (electrical, pneumatic, pitot-static, and alternate sources)
3. Attitude indicator
4. Heading indicator
5. Airspeed indicator
6. Vertical speed indicator
7. Altimeter
8. Other relevant instruments

K: COMMUNICATIONS EQUIPMENT
1. VHF/HF RADIOS
2. Audio panels

L: WARNING SYSTEMS
1. Aural, visual, and tactile warning systems
    a. Character and degree of urgency related to signal
2. Warning and caution annunciator systems

M: LIGHTING
1. Cockpit
2. Cabin
3. External
4. Power sources
5. Switches
6. Spare bulbs

N. EMERGENCY EQUIPMENT
1. Type (first aid kits, life preservers, and emergency exits & lights)
2. Location of each
3. Purpose of each

II AIRCRAFT SYSTEMS INTEGRATION

A. USE OF CHECKLIST
1. Safety Checks
2. Cockpit preparation
3. Checklist call-outs and responses
4. Checklist sequence

B. MINIMUM EQUIPMENT LIST (MEL)
1. FAR 135.179
2. Company Use Policy
    a. Pilot Responsibilities
    b. Planning and compliance with (o) and (M) limitations
    c. Maintenance record entries
3. Maintenance authorized for pilots to perform
    a. Determining proper pilot action
    b. Pulling and securing circuit breakers

C. FLIGHT PLANNING
1. Performance limitations
    a. Meteorological
    b. Weight
2. Required Fuel loads
3. Weather planning

D. NAVIGATIONAL SYSTEMS
1. Preflight preparation
2. Operation
3. Flight planning requirements

E. COCKPIT FAMILIARIZATION
1. Activation of aircraft systems controls and switches
    a. Normal
    b. Abnormal
    c. Emergency
2. Annunciators
    a. Lights
    b. Other caution and warning systems

4.5. AIRCRAFT GROUND

AIRCRAFT SPECIFIC: (MULTIENGINE)

AIRCRAFT SYSTEMS:

Refer to Section 7 for curriculum.

4.6. AIRCRAFT DIFFERENCES

OBJECTIVE: To familiarize crewmember with differences between aircraft of same model but different series.

INSTRUCTIONAL DELIVERY METHODS: Lecture/Discussion, Computer Training System

TRAINING AIDS: Flight manual

COURSEWARE: Aircraft flight manual, Aircraft

TRAINING HOURS: Refer to Section 3.

TESTING/CHECKING: Oral Quiz/Hands-On Quiz/Computer Test

SUBJECTS:

A. Aircraft Configuration
B. Aircraft Systems
C. Performance
D. Weight and Balance
E. Aircraft Limitations
F. Flight Characteristics
G. Emergency Procedures

4.7. GROUND CREW TRAINING

OBJECTIVE: To familiarize ground crew with company aircraft, procedures, and forms.

INSTRUCTIONAL DELIVERY METHODS: Lecture/ Demonstration, Computer Training Systems

TRAINING AIDS/ COURSEWARE: Operations manual, Aircraft, AC 91-32B

TRAINING HOURS: Refer to Section 3

TESTING/CHECKING: Written or Oral Quiz/Computer Test

GROUND CREW TRAINING

A. Airport Familiarization
   1. Ground Operations
      a. Airport and FAA regulations
      b. Company policy
   2. Briefing Area
   3. Ramp Operations
      a. Ops manual procedures
      b. Loading and unloading passengers
      c. Safety concerns
      d. Fueling

B. Aircraft Familiarization
   1. Activation of aircraft systems controls and switches (normal, abnormal, emergency)
   2. Safety around aircraft

C. Flight Operations Familiarization
   1. Company policies and procedures
   2. Flight locating and tracking procedures
   3. Lost/Overdue aircraft procedures
   4. Other emergency situations
   5. Handling incident and accident situations
   6. Passenger briefing
   7. Cargo processing and handling

LECTURE / DISCUSSION SUBJECT MODULES

Subject Module No. 1: Duties and Responsibilities

Objective:

To ensure that the crewmember understands what his responsibilities and duties are as they are explained in the Operations Manual.

Equipment/Courseware:

Carson Helicopter Services, Inc. Operations Manual

Instructional Delivery Techniques:

Lecture
Discussion

Subjects:

A. Company history, organization, and management structure.
B. Operational concepts, policies, and kind of operation.
C. Company forms, records, and administrative procedures.
D. Employee standards and rules of conduct.
E. Employee compensation, benefits, and contracts.
F. Authority and responsibilities of duty position.
G. Company-required equipment.
H. Company manual organization, revisions, and employee responsibilities concerning manuals.
I. Altitude awareness.

Completion Standards:

The individual shall complete the appropriate quiz in the testing and checking section with a score of 80% or better.

Subject Module No. 2: Federal Aviation Regulations and NTSB 830

Objective:

To insure that the flight crew understands and can correctly comply with the applicable FARs and NTSB 830.

Equipment/Courseware:

Federal Aviation Act of 1958, Revised April 1, 1981
Federal Aviation Regulations
National Transportation Safety Board Regulation 830 Handouts

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Flight crewmember certification, training, and qualification requirements.
B. Medical certificates, physical examinations, and fitness for duty requirements.
C. Flight control requirements (dispatch, flight release, or flight-locating).
D. Flight duty and rest requirements.
E. Recordkeeping requirements.
F. Operational rules in Part 91 and Part 135 and any other applicable regulations.
G. Regulatory requirements for company manuals.
H. Other appropriate regulations such as flightcrew emergency authority, interference with crewmembers, and reporting requirements.
I. National Transportation and Safety Board.
J. Part 830.

Completion Standards:

The individual shall complete the appropriate quiz in the testing and checking section with a score of 80% or better.

Subject Module No. 3: Operations Manual, Operating Certificate and Operations Specifications

Objective:

Insures that the crewmember has a working knowledge of the Company Operations Manual with emphasis on the Operations Specifications.

Equipment/Courseware:

Carson Helicopter Services, Inc. Operations Manual
Federal Aviation Act of 1958

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Regulatory basis in Part 135 and the FAA Act of 1958.
B. Definitions, description, and organization of operations specifications.
C. Limitations and authorizations of operations specifications.
D. Description of certificate.
E. Description of FAA certificate holding district office and responsibilities of FAA principal inspectors.
F. From the Operations Manual:
    1) Sections 1 through 7

Completion Standards:

The individual shall complete the appropriate quiz in the testing and checking section with a score of 80% or better.

Subject Module No. 4: Company Flight Control Procedures

Objective:

To insure that the crewmember understands the company's dispatch procedures.

Equipment/Courseware:

Carson Helicopter Services, Inc. Operations Manual

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Dispatch, flight release, flight locating systems and procedures and flight plans.
B. Individuals with the authority to dispatch aircraft.
C. Organization, duties, and responsibilities.
D. Weather and NOTAM information.
E. Company communications.

Completion Standards:

The individual shall complete the appropriate quiz in the testing and checking section with a score of 80% or better.

Subject Module No. 5: Company Ground Operations

Objective:

To insure that the crewmember understands the company's ground operations procedures and policies.

Equipment/Courseware:

Carson Helicopter Services, Inc. Operations Manual, Reference Library.

Instructional Delivery Techniques:

Lecture
Discussion

Subjects:

A. Ramp Operations
    1. General Ramp Safety Procedures
    2. Aircraft Movement
    3. Operations Manual Procedures
    4. Pilot-Ground crew responsibility
B. Rotors In Motion
    1. Operations Manual Procedures
    2. Pilot responsibility
C. Fueling Procedures
    1. Refueling in general – Contamination prevention (liquids & solids)
    2. Regulations – FAA, State of Hawaii
    3. Fueling on the ramp
    4. Remote site refueling
    5. Fuel grades & identification
D. Rapid Refueling Procedures
    1. Safety
    2. Regulations – FAA, State of Hawaii
    3. Rapid refuel procedures – Operations manual
    4. Pilot – Crew coordination & communication
    5. Emergency situations & shutdown

Completion Standards

The individual shall complete the appropriate oral or written quiz in the testing and checking section with a score of at least 80% or better corrected to 100%.

Subject Module No. 5.5: Weight and Balance - General

Objective:

To insure that the crewmember understands the common methods of determining proper loading, and center of gravity computations.

Equipment/Courseware:

Appropriate Aircraft Handbook

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Definitions
    1. Zero Fuel Weight
    2. Moments
    3. Inches of Datum
B. General loading procedures, center of gravity computations, weight shifts.
C. Effects of fuel burn and load shifts in flight
D. Weight and balance forms, load manifests, tables and charts, fuel slips, and other applicable documents.

Completion Standards:

The individual shall complete the appropriate quiz in the testing and checking section with a score of 80% or better.

Subject Module No. 6: Aircraft Performance

Objective:

To insure that the crewmember is capable of using aircraft performance charts in flight planning.

Equipment/Courseware:

Appropriate Aircraft Handbook

Instructional Delivery Techniques:

Lecture
Discussion
Demonstration
Computer Training Systems

Subjects:

A. Definitions:
    1. Maximum Endurance
B. Effects of temperature
C. Airport analysis system as appropriate to the type of operation and family or families of aircraft.
D. Effects of contaminated runways.
E. Maximum rate of climb.
F. Time, fuel, and distance to climb.
G. Cruise performance
H. Endurance profile

Completion Standards:

The individual shall complete the appropriate quiz in the testing and checking section with a score of 80% or better.

Subject Module No. 7: Meteorology

Objective:

To insure that the crewmember has a working knowledge and understanding of weather as it relates to aviation.

Equipment/Courseware:

Reference Library
Textbooks
Operations Manual

Instructional Delivery Techniques:

Lecture
Demonstration
Computer Training Systems

Subjects:

A. Meteorology
    1. Air Masses
    2. Fronts
    3. Weather Systems
    4. Local Weather Phenomena
    5. All Important Weather Data for Pilots
B. Weather Hazard
    1. Thunderstorms
    2. Fog and Obstructions to Vision
C. Aviation weather observations and reports
D. Aviation weather forecasts
E. Weather tables, conversion graphs and maps
F. Weather facilities
G. Windshear and associated weather
H. Weather analysis and dispatch considerations
I. Operation in turbulent air or icing conditions

Completion Standards:

The individual shall complete the appropriate quiz in the testing and checking section with a score of 80% or better.

Subject Module No. 8: Navigation

Objective:

To insure that the flight crew understand and can perform the tasks and duties required when operating VFR.

Equipment/Courseware:

Reference Library
Aircraft Flight Manual
Operations Manual

Instructional Delivery Techniques:

Lecture
Demonstration
Computer Training Systems

Subjects:

A. Definitions – Class I, Class II navigation
B. Basic navigational instruments
C. Dead reckoning and pilotage concepts and procedures
D. Navigational aids
E. GPS
F. Publications
G. Flight plans and procedures for flight location
H. Fuel requirements
I. Area approaches, including communications, facilities

Completion Standards:

The individual shall properly demonstrate the procedures for his/her assignment. The individual shall complete the appropriate quiz in the testing and checking section with a score of 80% or better.

Subject Module No. 9: Air Traffic Control Procedures

Objective:

To insure that the flight crew understand and can perform the assignments and tasks required of them when operating in and outside of controlled airspace.

Equipment/Courseware:

Reference Library
Aircraft Information Manual
Operations Manual

Instructional Delivery Techniques:

Lecture
Demonstration
Computer Training Systems

Subjects:

A. Definition – airways and ATIS.
B. Description of airspace
C. Separation standards
D. Controller and pilot responsibilities
E. ATC communications and phraseology
F. Air traffic flow control
G. Air traffic control procedures
H. Airport and departure operations
I. Airport night/low visibility ground operations
J. Enroute procedures
K. Arrival procedures
L. Emergency and lost communications procedures
M. Airport arrival

Completion Standards:

The individual shall complete the appropriate quiz in the testing and checking section with a score of 80% or better.

Subject Module No. 10: Enroute and Terminal Area Charting and Flight Planning

Objective:

To insure that the crewmember understands and is capable of using the charts and flight planning material available to him/her.

Equipment/Courseware:

Appropriate VFR/IFR Charts

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Terminology of charting services – NOAA
B. General company flight planning procedures
C. Airport diagrams
D. Map symbols
E. Procedures for pilotage

Completion Standards:

The individual shall complete the appropriate quiz in the testing and checking section with a score of 80% or better.

Subject Module No. 11: General Emergency Training Flight Duties and Responsibilities

Objective:

To insure that the flight crew understand and can perform the assignments and procedures required of them by the Operations Manual and Aircraft Flight Manual.

Equipment/Courseware:

Reference Library
Aircraft Flight Manual
Operations Manual

Instructional Delivery Techniques:

Lecture
Demonstration

Subjects:

A. Assignments of the PIC
B. Pilot in Command's emergency authority
C. Operations Manual Requirements
D. Preparation for emergency landing
E. Evacuation assignments
F. Reporting incidents and accidents

Completion Standards:

The individual shall properly demonstrate the procedures for his/her assignment. The individual shall complete the appropriate quiz in the testing and checking section with a score of 80% or better.

Subject Module No. 12 : Crew Coordination and Company Communications

Objective:

To provide the crewmember with company communications procedures and crew coordination and teamwork.

Equipment/Courseware:

Reference Library

Instructional Delivery Techniques:

Lecture
Discussion

Subjects:

A. Ground agency notification procedures (FAA Airport Authority)
B. Company Communication procedures

Completion Standards:

The individual shall complete the appropriate quiz in the testing and checking section with a score of 80% or better.

Subject Module No. 13 : Aircraft Fires

Objective:

To provide the crewmember with methods and appropriate procedures for dealing with aircraft fires.

Equipment/Courseware:

Reference Library

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Principles of combustion and classes of fire
B. Toxic fumes and chemical irritants
C. Use of appropriate hand-held extinguishers

Completion Standards:

The individual shall complete the appropriate quiz in the testing and checking section with a score of 80% or better.

Subject Module No. 14 : First Aid Equipment

Objective:

To familiarize the crewmember with contents and use of the aircraft first aid kit.

Equipment/Courseware:

Reference Library

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Contents of first aid kit
B. Requirements for first aid kit integrity
C. Use of individual items

Completion Standards:

The individual shall complete the appropriate quiz in the testing and checking section with a score of 80% or better.

Subject Module No. 15 : Illness Injury and Basic First Aid

Objective:

To train the flight crewmember in acceptable first aid techniques

Equipment/Courseware:

First Aid Kits
First Aid Books
Reference Library

Instructional Delivery Techniques:

Lecture
Demonstration
Drill
Computer Training Systems

Subjects:

A. Introduction to First Aid
B. Seeking medical assistance
C. Principles of CPR
D. Respiratory Emergencies
E. Direct pressure, elevation and pressure points to control bleeding
F. Ear and Sinus blocks
G. Wounds
H. Head injuries and internal injuries
I. Forms of artificial respiration
J. Bleeding control and improvising in various environments
K. Shock and mandatory actions

Completion Standards:

The individual shall properly demonstrate the procedures for first aid techniques discussed. The individual shall complete the appropriate quiz in the testing and checking section with a score of 80% or better.

Subject Module No. 16 : Ground Evacuation

Objective:

To insure that the crewmember is familiar with the procedures for passenger and crew evacuation.

Equipment/Courseware:

Reference Library

Instructional Delivery Techniques:

Lecture
Discussion

Subjects:

A. Aircraft configuration
B. Directing passenger flow
C. Blocked or jammed exit procedures
D. Fuel spills and other ground hazards

Completion Standards:

The individual shall complete the appropriate quiz in the testing and checking section with a score of 80% or better.

Subject Module No. 17 : Previous Aircraft Accidents/Incidents

Objective:

To provide the crewmember with an awareness of the factors leading to and the common cause of aircraft accidents.

Equipment/Courseware:

Reference Library

Instructional Delivery Techniques:

Lecture
Discussion

Subjects:

A. NTSB accident report reviews
B. Human factors/considerations
C. NASA reporting system

Completion Standards:

The individual shall complete the appropriate quiz in the testing and checking section with a score of 80% or better.

Subject Module No. 18 : Hand-Held Fire Extinguishers

Objective:

To familiarize the crewmember with the hand-held fire extinguishing equipment used aboard company aircraft.

Equipment/Courseware:

Reference Library

Instructional Delivery Techniques:

Lecture
Discussion

Subjects:

A. Inspection tags, dates and proper charge levels
B. Removal and stowage of extinguishers
C. Actual discharge of each type of extinguisher

Completion Standards:

The individual shall complete the appropriate quiz in the testing and checking section with a score of 80% or better.

Subject Module No. 19 : Emergency Exits

Objective:

To insure that the crewmember is familiar with the aircraft emergency exits.

Equipment/Courseware:

Reference Library

Instructional Delivery Techniques:

Lecture
Discussion

Subjects:

A. Actual operation (open and close) of each exit in the normal and emergency modes

Completion Standards:

The individual shall complete the appropriate quiz in the testing and checking section with a score of 80% or better.

Subject Module No. 20 : Flight Control

Objective:

To insure that the crewmember understands the company's dispatch and flight locating procedures.

Equipment/Courseware:

Reference Library

Instructional Delivery Techniques:

Lecture
Discussion

Subjects:

A. Dispatch procedure
B. Flight release

Completion Standards:

The individual shall complete the appropriate quiz in the testing and checking section with a score of 80% or better.

Subject Module No. 21 : Weight and Balance – Specific

Objective:

To provide the crewmember with a working knowledge of the aircraft weight and balance procedures.

Equipment/Courseware:

Reference Library

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Weight and balance specific to A/C

Completion Standards:

The individual shall complete the appropriate quiz in the testing and checking section with a score of 80% or better.

Subject Module No. 22 : Operations Specifications

Objective:

To familiarize the crewmember with authorizations and limitations in the Company Operations Specifications pertaining to the aircraft.

Equipment/Courseware:

Reference Library

Instructional Delivery Techniques:

Lecture
Discussion

Subjects:

A. Authorization and limitations specific to A/C

Completion Standards:

The individual shall complete the appropriate quiz in the testing and checking section with a score of 80% or better.

Subject Module No. 23 : Flight Techniques in Adverse Weather

Objective:

To prepare the pilot for an encounter with any of the following flight hazards.

Equipment/Courseware:

Meteorological Maps

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

VERTIGO AND SPATIAL DISORIENTATION

1) Senses used for maintaining equilibrium and orientation inner ear, postural, sight. Conflict between sight and other senses—false sensations from the inner ear, centrifugal force and gravity, postural sense.
2) Disorientation—conflict between flight instruments and physical senses; examples of maneuvers and situations.
3) Definition—optical phenomenon, lack of normal color contrasts perceptible to the human eye, a total absence of shadow, blowing snow.
4) Problem—no horizon, no definition, loss of depth perception
5) Solution—judgment, instrument proficiency, ability to overcome vertigo

Ice Fog

1) Definition/Description/Causes

Turbulence and Wind Shear

1) Recognizing and avoiding severe weather situations
2) Escaping from severe weather situations, in case of inadvertent encounters, including low altitude windshear
3) Operating in or near thunderstorms (including best penetrating altitudes), turbulent air, (including clear air turbulence), icing, hail, and other potentially hazardous meteorological conditions.
4) Causes – thunderstorms, fronts, topographical flow, sea breeze fronts (temperature over land/water), mountain waves.
5) Detection -- surface analysis, millibar, radar return charts, PIPREPS, analyze the weather continuously in flight, aircraft performance in wind shear (energy trade-altitude for speed or vice versa and carrying extra speed).

6) Procedures for coping with wind shear takeoff, maximum performance, prompt action, awareness.

Subjects (cont'd) :

A. OPERATIONS IN HEAVY PRECIPITATION
B. LOW VISIBILITY
C. CONTAMINATED RUNWAYS
Wake Turbulence Avoidance

Completion Standards:

The individual shall complete the appropriate quiz in the testing and checking section with a score of 80% or better corrected to 100%.

Subject Module No. 24 : Performance

Objective:

To provide the crewmember with a working knowledge of the aircraft performance tables and charts.

Equipment/Courseware:

Reference Library

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. The use of charts, tables, tabulated data and other related manual information
B. Normal, abnormal, and emergency performance problems
C. Meteorological and weight-limiting performance factors – temperature, pressure, contaminated runways, precipitation, climb/runway limits.
D. Special operational conditions – unpaved runways, drift down requirements, and high altitude landing areas

Completion Standards:

The individual shall complete the appropriate quiz in the testing and checking section with a score of 80% or better.

Subject Module No. 25 : Aircraft General Description

Objective:

To provide the crewmember with a general description of the aircraft.

Equipment/Courseware:

Reference Library

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Dimensions
B. Turning Radius
C. Panel Layouts
D. Cockpit and Cabin Configurations
E. Other Major Systems and Components

Completion Standards:

The individual shall complete the appropriate quiz in the testing and checking section with a score of 80% or better.

Subject Module No. 26 : Equipment and Furnishings

Objective:

To familiarize the crewmember with aircraft equipment and furnishings.

Equipment/Courseware:

Reference Library

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Aircraft Exits
B. Cargo area
C. Crewmember and Passenger seats
D. Seating and/or Cargo configurations
E. Non-Emergency equipment and furnishings

Completion Standards:

The individual shall complete the appropriate quiz in the testing and checking section with a score of 80% or better.

Subject Module No. 27 : Emergency Equipment

Objective:

To familiarize the crewmember with the emergency equipment on the aircraft.

Equipment/Courseware:

Reference Library

Instructional Delivery Techniques:

Lecture
Discussion

Subjects:

A. Type, location, and purpose of each item of emergency equipment
    1) Fire and oxygen bottles
    2) First aid kits
    3) Life rafts
    4) Life preservers
    5) Emergency exits
B. Each Item of Egress
    1) Escape straps or handles

Completion Standards:

The individual shall complete the appropriate quiz in the testing and checking section with a score of 80% or better.

Subject Module No. 28 : Powerplant

Objective:

To provide the crewmember with a knowledge of the aircraft powerplant.

Equipment/Courseware:

Reference Library

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Basic Engine Description
B. Engine Components
    1) Accessory drives
    2) Ignition
    3) Oil
    4) Fuel Control
    5) Hydraulic
    6) Bleed air features

Completion Standards:

The individual shall complete the appropriate quiz in the testing and checking section with a score of 80% or better.

Subject Module No. 28a : Powertrain and Dynamic Components

Objective:

To provide the crewmember with a knowledge of the aircraft powertrain and dynamic systems components.

Equipment/Courseware:

Reference Library

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Rotor Blades
    1. Main rotor blades
    2. Head
    3. Tailrotor
B. Transmissions and Gear Boxes
    1. Main transmission
    2. Intermediate gearboxes
    3. Tailrotor gearboxes
C. Driveshafts
    1. Engine driveshafts
    2. Tailrotor driveshafts
    3. Clutches
    4. Rotorbrakes

Completion Standards:

The individual shall complete the appropriate quiz in the testing and checking section with a score of 80% or better.

Subject Module No. 29 : Electrical

Objective:

To familiarize the crewmember with the aircraft electrical system.

Equipment/Courseware:

Reference Library

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Sources of Aircraft Power
    1) Engine-Driven generators
    2) External power
B. Electrical Buses
C. Circuit Breakers
D. Fuses
E. Battery
F. Standby Power Systems

Completion Standards:

The individual shall complete the appropriate quiz in the testing and checking section with a score of 80% or better.

Subject Module No. 30 : Landing Gear

Objective:

To insure that the crewmember is familiar with the aircraft landing gear and brake systems.

Equipment/Courseware:

Reference Library

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Landing Gear

Completion Standards:

The individual shall complete the appropriate quiz in the testing and checking section with a score of 80% or better.

Subject Module No. 31: Flight Controls

Objective:

To familiarize the crewmember with aircraft flight control systems.

Equipment/Courseware:

Reference Library

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Primary Controls
    1) Cyclic
    2) Pedals
    3) Collective
B. Secondary Controls
    1) Trim
    2) Damping Mechanisms

Completion Standards:

The individual shall complete the appropriate quiz in the testing and checking section with a score of 80% or better.

Subject Module No. 32 : Aircraft Fuel Systems, Handling and Management

Objective:

To provide the crewmember with an understanding and awareness of aircraft fuel systems, handling and management.

Equipment/Courseware:

Aircraft Flight Manual, Reference Library, Operations Manual

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Fuel Tanks
    1) Location and Capacity
B. Fuel Pumps
    1) Engine driven pumps
    2) Boost Pumps
C. Valves
D. Filters
    1) Engine
    2) Airframe
E. Drains
F. Quantity Indicators
G. Refueling in General – Contamination Prevention
    1) Fuel contamination (liquids & solids)
    2) Filtration and separation
    3) Remote site refueling
        a. Refilling used drums, filters and pumps
        b. Safety
    4) Rapid refueling
H. Fuel Identification
    1) Fuel grades
    2) Alternative fuels and additives
I. Fuel Management – Knowledge of Fuel Systems

Completion Standards

The individual shall complete the appropriate quiz in the testing and checking section with a score of 80% or better.

Subject Module No. 33 : Communications Equipment

Objective:

To familiarize the crewmember with the communications equipment on company aircraft.

Equipment/Courseware:

Reference Library

Instructional Delivery Techniques:

Lecture
Discussion

Subjects:

A. Audio Panels
B. Inflight Interphone and Passenger Address System
C. Tecsonics FM
D. GPS / Comm.

Completion Standards:

The individual shall complete the appropriate quiz in the testing and checking section with a score of 80% or better.

Subject Module No. 34 : Flight Instruments

Objective:

To insure that the crewmember is familiar with the flight instruments and panel arrangement on the aircraft.

Equipment/Courseware:

Reference Library

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Overview of Panel Arrangement
B. Electrical and Pitot-Static sources
C. Alternate Sources for Flight Instruments
D. Attitude Indicator
E. Directional Gyro and Magnetic Compass
F. Airspeed Indicator
G. Vertical Speed Indicator
H. Altimeter

Completion Standards:

The individual shall complete the appropriate quiz in the testing and checking section with a score of 80% or better.

Subject Module No. 35 : Warning Systems

Objective:

To provide the crewmember with a familiarity with the aircraft warning devices and systems.

Equipment/Courseware:

Reference Library

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Aural, Visual, and Tactile Warning Systems
B. Warning and Caution Annunciator Systems

Completion Standards:

The individual shall complete the appropriate quiz in the testing and checking section with a score of 80% or better.

Subject Module No. 36 : Lighting

Objective:

To familiarize the crewmember with the aircraft lighting systems.

Equipment/Courseware:

Reference Library

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Cockpit Lighting
B. Cabin Lighting
C. External Lighting
D. Power Sources
E. Switch Positions

Completion Standards:

The individual shall complete the appropriate quiz in the testing and checking section with a score of 80% or better.

Subject Module No. 37 : Use of Checklists

Objective:

To insure that the crewmember is familiar with the checklists required for the operation of each aircraft.

Equipment/Courseware:

Reference Library

Instructional Delivery Techniques:

Lecture
Discussion

Subjects:

A. Safety Checks
B. Cockpit Preparation
C. Checklist Sequence

Completion Standards:

The individual shall complete the appropriate quiz in the testing and checking section with a score of 80% or better.

Subject Module No. 37a : Minimum Equipment List (MEL)

Objective:

To insure that the crewmember is familiar with the procedures and the use of Minimum Equipment Lists required for the operation of each aircraft.

Equipment/Courseware:

Appropriate Aircraft MEL Manual
Company Operations Manual

Instructional Delivery Techniques:

Lecture
Discussion

Subjects:

A. FAR 135.179
B. Company Use Policy
    1. Pilot Responsibilities
    2. Compliance with (O) and (M) procedures
    3. Maintenance record entries
C. Maintenance Procedures Authorized for Pilots to Perform
    1. Determining proper pilot action
    2. Pulling and securing circuit breakers

Completion Standards

The individual shall complete the appropriate quiz in the testing and checking section with a score of 80% or better.

Subject Module No. 38 : Cockpit Familiarization

Objective:

To familiarize the crewmember with aircraft cockpit and crew stations.

Equipment/Courseware:

Reference Library

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Activation of Aircraft System Controls and Switches
B. Normal, Abnormal, and Emergency Switches and Control Positions
C. Annunciator and Lights
D. Caution and Warning Systems

Completion Standards:

The individual shall complete the appropriate quiz in the testing and checking section with a score of 80% or better.

Subject Module No. 39 : Preflight Planning

Objective:

To insure that the crewmember is proficient in preflight planning procedures and requirements.

Equipment/Courseware:

Reference Library

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Performance Limitations
B. Required Fuel Loads
C. Weather Planning

Completion Standards:

The individual shall complete the appropriate quiz in the testing and checking section with a score of 80% or better.

Subject Module No. 40 : Preflight

Objective:

To insure that the pilot understands and is able to properly perform the tasks required of him during the preflight period up to but not including engine start.

Equipment/Courseware:

Aircraft Operating Handbook or Pilot Operating Handbook

Instructional Delivery Techniques:

Lecture
Discussion
Demonstration
Drill

Subjects:

A. Visual Inspection
B. Pre-taxi Procedures
    1) Equipment Familiarization
    2) Checklist Use
C. Performance Limitations

Completion Standards:

The individual shall perform a correct preflight inspection, show the location of appropriate paperwork, demonstrate the proper use of the checklist, perform the correct prestart.

Subject Module No. 41 : Surface Operation

Objective:

To insure that the pilot understands and is able to properly perform the tasks required of him during the engine start and taxi period up to but not including takeoff.

Equipment/Courseware:

Aircraft Operating Handbook or
Pilot Operating Handbook AC 61-21a

Instructional Delivery Techniques:

Lecture
Discussion
Demonstration
Drill

Subjects:

A. Cockpit Management
B. Securing Cargo
C. Starting
D. Taxiing
E. Lift-to-Hover IGE/OGE
F. Hover Turns
G. Sideward/Rearward Hovering
H. Slope Operations
    1) Liftoff
    2) Landing
    3) Takeoff

Completion Standards:

The individual shall perform correct prestart checks, pretaxi checks, demonstrate a proper use of the checklist, perform the correct pretaxi procedures and show a knowledge of powerplant checks and radio checks.

Subject Module No. 42 : Takeoff

Objective:

To insure that the pilot is capable of performing the listed takeoff maneuvers safely and effectively.

Equipment/Courseware:

Aircraft Operating Handbook or
Pilot Operating Handbook AC 61-21a

Instructional Delivery Techniques:

Lecture
Discussion
Demonstration
Drill

Subjects:

A. Normal
B. Obstacle Clearance
C. Running (High Altitude)
D. Category “A”
E. Category “A” w/ Powerplant Failure *before* CDP
F. Category “A” w/ Powerplant Failure *after* CDP
G. Rejected Takeoff

Completion Standards:

The individual shall demonstrate the procedures listed according to the guidelines established in the operating handbook and the Commercial Pilot Practical Test Standards.

Subject Module No. 43 : Climb

Objective:

To insure that the pilot is capable of performing the listed climb maneuvers safely and effectively.

Equipment/Courseware:

Aircraft Operating Handbook or Pilot Operating Handbook

Instructional Delivery Techniques:

Lecture
Discussion
Demonstration
Drill

Subjects:

A. Normal
B. Best rate
C. Best Angle

Completion Standards:

The individual shall demonstrate the procedures listed according to the guidelines established in the operating handbook and the Commercial Pilot Practical Test Standards.

Subject Module No. 44 : En Route

Objective:

To insure that the pilot is capable of performing the listed enroute maneuvers safely and effectively.

Equipment/Courseware:

Aircraft Operating Handbook or
Pilot Operating Handbook AC 61-21a

Instructional Delivery Techniques:

Lecture
Discussion
Demonstration
Drill

Subjects:

A. Medium Banked Turns
B. Powerplant Shutdown and Restart
C. Low Speed Characteristics
D. High Speed Characteristics

Completion Standards:

The individual shall demonstrate the procedures listed according to the guidelines established in the operating handbook and the Commercial Pilot Practical Test Standards.

Subject Module No. 45 : Descent

Objective:

To insure that the pilot is capable of performing the listed descent maneuvers safely and effectively.

Equipment/Courseware:

Aircraft Operating Handbook or
Pilot Operating Handbook AC 61-21a

Instructional Delivery Techniques:

Lecture
Discussion
Demonstration
Drill

Subjects:

A. Normal
B. Maximum Rate
C. Autorotative Glide

Completion Standards:

The individual shall demonstrate the procedures listed according to the guidelines established in the operating handbook and the Commercial Pilot Practical Test Standards.

Subject Module No. 46 : VFR Approaches

Objective:

To ensure that the pilot is capable of performing the listed approach maneuvers safely and effectively.

Equipment/Courseware:

Aircraft Operating Handbook or Pilot Operating Handbook

Instructional Delivery Techniques:

Lecture
Discussion
Demonstration
Drill

Subjects:

A. VFR Approaches
   1) Normal
   2) Obstacle clearance
   3) High altitude
   4) Elevated landing site
   5) With degraded control augmentation
   6) Balked landing

Completion Standards:

The individual shall demonstrate the procedures listed according to the guidelines established in the operating handbook and the Commercial Pilot Practical Test Standards.

Subject Module No. 47 : After Landing

Objective:

To ensure that the pilot is capable of performing the listed after landing procedures safely and effectively.

Equipment/Courseware:

Aircraft Operating Handbook or Pilot Operating Handbook

Instructional Delivery Techniques:

Lecture
Discussion
Demonstration
Drill

Subjects:

A. Taxi
B. Parking
C. Stopping the Rotors
D. Emergency Evacuation

Completion Standards:

The individual shall demonstrate the procedures listed according to the guidelines established in the operating handbook and the Commercial Pilot Practical Test Standards.

Subject Module No. 48 : Unprepared Site Operations

Objective:

To ensure that the pilot is capable of performing the listed maneuvers safely and effectively.

Equipment/Courseware:

Aircraft Operating Handbook or Pilot Operating Handbook

Instructional Delivery Techniques:

Lecture
Discussion
Demonstration
Drill

Subjects:

A. Confined Areas
B. Pinnacles
C. Ridgelines

Completion Standards:

The individual shall demonstrate the procedures listed according to the guidelines established in the operating handbook and the Commercial Pilot Practical Test Standards.

Subject Module No. 49 : Miscellaneous Flight Procedures

Objective:

To insure that the pilot is capable of performing the listed procedures safely and effectively.

Equipment/Courseware:

Aircraft Operating Handbook or Pilot Operating Handbook

Instructional Delivery Techniques:

Lecture
Discussion
Demonstration
Drill

Subjects:

A. Air Hazard Avoidance
B. Windshear/Microburst

Completion Standards:

The individual shall demonstrate the procedures listed according to the guidelines established in the operating handbook and the Commercial Pilot Practical Test Standards.

Subject Module No. 50 : Normal and Abnormal Procedures

Objective:

To ensure that the pilot is capable of performing and dealing with the listed normal and abnormal procedures safely and effectively.

Equipment/Courseware:

Aircraft Operating Handbook or Pilot Operating Handbook

Instructional Delivery Techniques:

Lecture
Discussion
Demonstration
Drill

Subjects:

A. Fuel and Oil
B. Electrical
C. Hydraulic
D. Flight Controls
E. Loss of Anti-Torque Effectiveness
F. Flight Instrument System Malfunction
G. Communication Equipment
H. Navigation Systems

Completion Standards:

The individual shall demonstrate the procedures listed according to the guidelines established in the operating handbook and the Commercial Pilot Practical Test Standards.

Subject Module No. 51 : Emergency Flight Procedures

Objective:

To ensure that the pilot is capable of performing and dealing with the listed emergency procedures safely and effectively.

Equipment/Courseware:

Aircraft Operating Handbook or Pilot Operating Handbook

Instructional Delivery Techniques:

Lecture
Discussion
Demonstration
Drill

Subjects:

A. Aircraft Fires
B. Smoke Control
C. Powerplant Malfunction
D. Electrical, Hydraulic, Pneumatic Systems
E. Flight Control Systems Malfunction
F. Landing Gear Malfunctions
G. Anti-Torque Failure
H. Settling with Power

Completion Standards:

The individual shall demonstrate the procedures listed according to the guidelines established in the operating handbook and the Commercial Pilot Practical Test Standards.

Subject Module No. 52 : Competency Ride 135.293

Objective:

To ensure that the pilot meets minimum flight and ground performance standards.

Equipment/Courseware:

14 CFR Part 135

Instructional Delivery Techniques:

Demonstration
Discussion

Subjects:

A. 14 CFR Part 135.293a
B. 14 CFR Part 135.293b

Completion Standards:

The pilot shall pass a written or oral test on the subjects identified in 135.293a. The pilot shall demonstrate his competence in practical skills and techniques in the aircraft by successfully completing any or all or the maneuvers and procedures currently required for the operations authorized and appropriate to the category, class and type or aircraft involved as per 135.293b.

Subject Module No. 53 : Line Check 135.299

Objective:

To ensure that the pilot is able to satisfactorily perform the duties and responsibilities of his assignment.

Equipment/Courseware:

14 CFR Part 135

Instructional Delivery Techniques:

Demonstration
Discussion

Subjects:

A. 14 CFR 135.299a

Completion Standards:

The pilot shall satisfactorily perform the duties and responsibilities of a pilot in command in operations under Part 135.

Subject Module No. 54 : Written Examinations

Objective:

To insure that the crewmember understands and is able to apply the general and specific knowledge required in his position.

Equipment/Courseware:

Copies of FAA Private Pilot
Instrument Rating
Commercial Pilot ATP Written Tests
Examinations derived from the FAA written examinations and publications in the Company Library

Instructional Delivery Techniques:

Discussion

Subjects:

Examinations covering the material presented in each curriculum segment.

Completion Standards:

The individual shall complete the appropriate examination with a score of 80% or better.

Subject Module No. 55 : Check Airman, Flight and Ground Instructor Training

Objective:

To insure that the crewmember understands what his responsibilities and duties are as they are explained in FAR 135.337.

Equipment/Courseware:

14 CFR Part 135
Relevant Flight Manuals
Aviation Instructors Handbook, AC 61-14

Instructional Delivery Techniques:

Lecture
Discussion

Subjects:

A. Pilot Check Airman: Duties, Functions, & Responsibilities
B. The Applicable Provisions of FAR Part 135
C. Company Policies and Procedures
D. The Appropriate Methods, Procedures and Techniques for Conducting Required Checks
E. Proper Evaluation of Pilot Performance Including the Detection of:
    1) Improper and insufficient training
    2) Personal characteristics that could adversely affect safety
F. The Appropriate Corrective Action for Unsatisfactory Checks
G. The Approved Methods, Procedures, and Limitations for Performing the Required Normal, Abnormal, & Emergency Procedures in the Aircraft.

* H. The Fundamental Principles of the Teaching-Learning Process
* I. Teaching Methods and Procedures
* J. The Instructor-Student Relationship

* Note: These items are not required of an Instructor who holds a valid Flight Instructor Certificate (CFI) – Ref: 135.339b.

Completion Standards:

The individual shall complete the appropriate quiz in the testing and checking section with a score of 80% or better.

Subject Module No. 56 : Check Airman & Flight Instructor Flight Training

Objective:

To insure that the crewmember understands what his responsibilities and duties are as they are explained in FAR 135.339.

Equipment/Courseware:

One of each aircraft the individual will operate

Instructional Delivery Techniques:

Lecture
Discussion
Drill

Subjects:

A. Inflight training and practice in conducting flight checks from the left and right pilot seats in the required normal, abnormal, and emergency maneuvers to insure that person's competence to conduct the pilot flight checks and flight training.

B. The appropriate safety measures to be taken from either pilot seat for emergency situations that are likely to develop in training.

C. The potential results of improper or untimely safety measures during training.

Completion Standards:

The individual shall comply with the requirements of FAR 135.339 and demonstrate competency and proficiency at a higher level than the requirements of the certificate he holds.

Subject Module No. 58 : Differences Training

Objective:

To insure that the crewmember understands the different operating procedures and limitations of the different series of aircraft.

Equipment/Courseware:

Aircraft
Flight Manuals
Aircraft Flight Manuals

Instructional Delivery Techniques:

Lecture
Discussion
Demonstration

Subjects:

A. Aircraft Configuration
B. Aircraft Systems
C. Performance
D. Weight and Balance
E. Aircraft Limitations
F. Flight Characteristics
G. Emergency Procedures

Completion Standards:

The individual shall complete a written or oral examination given by the instructor to determine adequate knowledge of differences in one series aircraft from another.

4.8. FLIGHT TRAINING CURRICULUM SEGMENT

PIC – Helicopter (Single Engine)

OBJECTIVE: To fully expose a potential PIC to all the information/ maneuvers that he may be expected to execute.

INSTRUCTIONAL DELIVERY METHOD: Lecture/Discussion/Demonstration and Performance

TRAINING AIDS: Aircraft, Operator's Manual, McDonnell Reference, Bell Reference

TRAINING HOURS: Refer to Section 3.

TESTING/CHECKING: Flight Check / Oral Evaluation

A. PREPARATION
   1) Visual inspection
   2) Pretaxi procedures
   3) Performance limitations

B. SURFACE OPERATION
   1) Starting
   2) Lift-to-Hover IGE/OGE
   3) Hover turns IGE/OGE
   4) Sideward/rearward hovering
   5) Slope operations
      a. Liftoff
      b. Landing
      c. Taxiing

C. TAKEOFF
   1) Normal
   2) Obstacle clearance
   3) Running (high altitude)
   4) Rejected takeoff

D. CLIMB
   1) Normal
   2) Best rate
   3) Best angle

E. EN ROUTE
   1) Medium-banked turns
   2) Low-speed characteristics

3) High-speed characteristics

F. DESCENT
1) Normal
2) Maximum rate
3) Autorotative glide

G. APPROACHES
1) VFR Procedures (M)
a. Normal
b. Obstacle clearance
c. High altitude
d. Elevated landing site
e. With degraded control augmentation
f. Shallow approach, running landing

H. LANDINGS
1) Normal
2) Crosswind
3) With degraded control augmentation

I. AFTER LANDING
1) Taxiing
2) Parking #
3) Stopping the rotors
4) Emergency evacuation/egress

J. UNPREPARED SITE OPERATIONS
1) Confined areas
2) Pinnacles
3) Ridgelines

K. OTHER FLIGHT PROCEDURES DURING ANY AIRBORNE PHASE
1) Air hazard avoidance #
2) Windshear/Microburst

L. SYSTEMS PROCEDURES DURING ANY AIRBORNE PHASE (Normal, Abnormal, Alternate)
1) Fuel & Oil
2) Electrical
3) Flight controls
4) Loss of anti-torque effectiveness (M)
5) Communications equipment
6) Navigation equipment

M. SYSTEMS PROCEDURES DURING ANY AIRBORNE PHASE (Emergency)
1) Aircraft fires
2) Smoke control
3) Powerplant malfunctions
4) Electrical, hydraulic, pneumatic systems
5) Flight control systems malfunction

6) Anti-torque failure (M)
7) Settling with power

4.9. FLIGHT TRAINING CURRICULUM SEGMENT

PIC – Helicopter (MultiEngine)

Refer to Section 7 for Curriculum.

4.10. QUALIFICATION

OBJECTIVE: To determine that a student has satisfactorily completed all required curriculum segments and to determine whether sufficient learning has occurred by the comparison of the student's performance, in practical situations, to established standards.

Each person required to train under a curriculum must complete the curriculum in its entirety.

All written examinations must be complete with a score of 70%. Subject areas found deficient will be reviewed and the student knowledge corrected to 100%. Such review will be documented by the instructor.

Satisfactory completion of flight training required events will be in accordance with the standards set forth in the Practical Test Standards FAA-S-8081-5 (ATP), FAA-S-8081-2 (COMM), and FAA-S-8081-4A (INST) as appropriate for the pilot certificate and rating required for the duty position assigned.

A student who fails to meet the qualification objectives must continue training until those objectives are met, unless he/she is removed from training status.

A student will become fully qualified to serve in a specific duty position in a specific aircraft upon satisfactory completion of the qualification segment requirements as follows:

1) PIC Proficiency Check……FAR 135.293
2) PIC Line Check……FAR 135.299

CURRICULUM SEGMENT: QUALIFICATION

OBJECTIVE: To insure that pilots meet or exceed the minimum qualifications required for their duty assignments.

INSTRUCTIONAL DELIVERY METHOD: Oral and Written Testing, Flight Check

TESTING/CHECKING: Written or Oral examination
FAA Inspector/Check Airman Certification

GENERAL: All pilots shall be required to successfully complete the VFR checks presented in this section as a minimum. Inspectors and/or check airmen are authorized to add any event to determine qualification under FAR Parts 135.293 and 135.299.

EXPERIENCE: The following are minimum experience requirements:

- PIC – Commercial Pilot Certificate or ATP

  For VFR only:
  - 2000 hours pilot time
  - 500 hours night
  - 100 hours of night—cross country
  - A current 1st or 2nd Class Medical Certificate

QUALIFICATION SEGMENT – BASIC CHECKING MODULE
VFR COMPETENCY CHECK (FAR 135.293) – (Helicopter)

ORAL OR WRITTEN TEST……PIC/SIC

GROUND OPERATIONS
- Preflight Inspection……..PIC/SIC
- Taxiing and Ground Hover……PIC/SIC
- Pre-takeoff Checks……..PIC/SIC

TAKEOFFS
- Normal……PIC/SIC
- With Powerplant Failure (MultiEngine Only)……PIC/SIC
- Emergency Deceleration (QuickStop) ……PIC/SIC
- Crosswind……..PIC/SIC
- High Altitude Takeoff…… PIC/SIC (1)

INFLIGHT MANEUVERS
- Settling with Power……PIC/SIC
- Unusual Attitude Recovery……PIC/SIC

APPROACHES AND LANDINGS
- Normal Landings……PIC/SIC
- Landing with Engine Out (MultiEngine Only) ……PIC/SIC
- Crosswind Landings……PIC/SIC
- High Altitude Landings…… PIC/SIC (1)

NON-NORMAL EMERGENCY PROCEDURES
- Normal and Abnormal Procedures……PIC/SIC
- Simulated Engine Failure……PIC/SIC
- Autorotations (Single Engine Only) ……..PIC/SIC
- Hovering Autorotations……PIC/SIC
- Tail Rotor Failures (Oral) ……..PIC/SIC
- System Failures……PIC/SIC
- Dynamic Rollover (Oral) ……PIC/SIC
- Low Rotor RPM (Oral) ……PIC/SIC
- Anti-Torque System Failure (Oral) ……..PIC/SIC
- Confined Area/Pinnacle Operations……PIC
- Slope Operations……PIC

(1) – These requirements shall be met when operations above 5000 feet Pressure Altitude are required.

QUALIFICATION SEGMENT – ADDITIONAL CHECKING MODULE
PIC LINE CHECK (FAR 135.299) – (Helicopter)

1) The en route portion of this check shall consist of at least one flight over a representative route segment that the Certificate Holder can be expected to fly in Part 135 Operations.

2) The pilot must be determined to have satisfactorily performed the duties and responsibilities of a PIC in operations under FAR Part 135. This certification shall be entered in the pilot's training record.

Note: This check must be accomplished each 12 calendar months in one of the makes and model of aircraft the pilot is authorized to fly.

4.11. INSTRUCTOR GROUND TRAINING

OBJECTIVE: To introduce a potential employee in the instructor aspect and prepare him to evaluate effectively.

INSTRUCTIONAL DELIVERY METHOD: Lecture/Discussion

TRAINING AIDS: Reference Library, Instructor Pilot's Guide

TRAINING HOURS: Refer to Section 3

TESTING/CHECKING: Oral Evaluation

TRAINING FOR PILOTS NOT HOLDING VALID INSTRUCTOR CERTIFICATES

THE LEARNING PROCESS

1) Definition of learning
2) Characteristics of learning
3) Laws of learning
4) How people learn
5) Levels of learning
6) Learning skills
7) Forgetting and retention
8) Transfer of learning
9) Habit formation

A. HUMAN BEHAVIOR

1) Control of human behavior
2) Human needs
3) Defense mechanisms
4) The instructor's role in human relations

B. EFFECTIVE COMMUNICATION

1) Basic elements of the communication process
2) Barriers to effective communication

C. THE TEACHING PROCESS

1) Preparation
2) Presentation
3) Application
4) Review and evaluation

D. TEACHING METHODS

1) Organizing material

2) Lecture method
3) Guided discussion method
4) Demonstration-performance method
5) Programmed instruction

E. THE INSTRUCTOR AS A CRITIC
1) Purpose of a critique
2) Characteristics of an effective critique
3) Methods of critique
4) Ground rules for critiquing

F. EVALUATION
1) Oral quizzing
2) Written tests
3) Performance tests

TRAINING FOR ALL PILOTS

G. OPERATOR SPECIFIC ITEMS
1) Instructor/check airman duties, functions, and responsibilities
2) Company training policies and procedures
3) Applicable provisions of FAR 135, Subpart H
4) Appropriate methods, procedures, and techniques for conducting the required checks
5) Proper evaluation of pilot performance including the detection of:
   a. Improper and insufficient training
   b. Personal characteristics that could adversely affect safety
6) Appropriate corrective action for unsatisfactory checks
7) Approved methods, procedures, and limitations for performing the required normal, abnormal, and emergency procedures in the aircraft
8) FAR 1, 61,91,135
9) Flight operations manual and operations specifications

4.12. INSTRUCTOR FLIGHT TRAINING

OBJECTIVE: To insure a fully capable instructor receives proper training to enable him to access any and all situations.

INSTRUCTIONAL DELIVERY METHOD: Demonstration, Performance & Discussion

TRAINING AIDS: Aircraft

TRAINING HOURS: Refer to Section 3

TESTING/CHECKING: Oral/Flight Evaluation

GENERAL:

Flight instructors will receive flight training in accordance with FAR 135.339(c). The training will consist of the following:

A. Practice conducting flight checks from both left and right pilot seats sufficient to insure competence in handling normal, abnormal, and emergency maneuvers to be anticipated in the course of a training session or flight check.

B. Safety measures to be taken from either seat in the event of an emergency likely to develop in training

C. The potential results of improper or untimely safety measures during training

SECTION 5

TABLE OF CONTENTS

5.1. FLIGHT TRAINING MANEUVERS/PROCEDURES

INDEX

****NOTE: The following section covers helicopters with turbine engines, reciprecating engines and Skid type landing gear as well as wheeled type landing gear.**

No.1 Taxiing – Ground

OBJECTIVE:

Practice of this maneuver will enable the trainee to move the helicopter, under power, forward and in turns at variable ground speeds, while the landing gear is in contact with the ground, without exceeding helicopter or engine limitations.

DESCRIPTION:

This maneuver is used to position the helicopter in relatively close quarters on the ground and is preparatory training for High Altitude Takeoffs. It should be accomplished on a firm level surface. Before initiating ground taxiing, the rpm is increased to normal operating rpm. Incline the cyclic slightly forward of neutral and apply UP collective smoothly until forward motion is started. Control the groundspeed at 3-5 mph with judicial use of collective; e.g., UP collective to increase groundspeed and vice versa. Directional control is maintained with anti-torque pedals.

Note: RPM is governed on turbine powered helicopters.

Turns while taxiing are accomplished primarily with anti-torque pedal being applied in the desired direction of the turn. Some lateral cyclic “into the turn” will offset the effects of centrifugal force.

Crosswind taxiing requires lateral cyclic into the wind prevent drifting while maintaining direction with pedals and ground speed with collective.

ACCEPTABLE PERFORMANCE GUIDELINES:

Performance will be evaluated on the basis of aircraft and rpm control. Ground speed should be stabilized at 3-5 mph in straight and turning movements. The rpm should be kept in the high green throughout the maneuver. There should never be any doubt as to the trainee having full control of the aircraft.

No.2 Taxiing – Hover

OBJECTIVE:

Practice of this maneuver will enable the trainee to hold the helicopter in a hover over a selected point on the ground or to move the helicopter from one point to another while maintaining altitude, desired heading, ground speed control, and rpm (reciprocating-engine).

DESCRIPTION:

The hover is the foundation of many other maneuvers such as vertical landing, normal takeoff, terminating approach and others. In no wind conditions, the rotor disc will be parallel to the ground in a hover. Any variation from this relationship will result in helicopter movement over the ground. Rotor disc attitude is difficult to ascertain with accuracy so you must rely upon aircraft attitude for reference. If the helicopter starts to move from a hover, the aircraft will appear to be leaning in that direction. Leveling the aircraft WILL NOT IMMEDIATELY stop the error, however, provided the aircraft was perfectly leveled, the helicopter will coast to a stop. Preventing a change of attitude from hovering attitude will result in a stationary hover. Because of inherent delays in rotor system reaction, small errors in attitude can be corrected before the reaction to the error can begin. Overcontrolling is generally the result of failing to neutralize the cyclic after a correction has been made. When a wind is present, the rotor disc must be tilted into the wind just enough to counteract the effects of the wind. Slight changes in the hovering attitude may be noted with each change of operating conditions (wind, CG, etc.).

Altitude control in a hover is the function of the collective provided the rpm is CONSTANT. Variations of rpm will change the total lift; therefore, variations will be reflected by change altitude. Make every effort to maintain a constant rpm. The collective is then used to maintain altitude as well as to climb and descend in hovering flight.

Directional control in hovering flight is accomplished by neutralizing the effects of torque with the anti-torque pedals. Hovering turns are accomplished by use of anti-torque pedals in the desired direction of the turn. Since application of left pedal increases the pitch of the tail rotor blades, more power is required in left turns. In left turns, additional throttle will be necessary (in reciprocating engine-powered helicopters) to maintain a constant rpm. Right turns produce just the opposite results. Throttle will have to be reduced slightly to prevent an overspeed of rpm.

DESCRIPTION (cont'd):

When the rpm is governed (as on the turbine-powered helicopters) slight variations of torque (increase on left turns and decrease on right turns) will be noted. These variations are generally very slight and would only be noticeable when power requirements of heavy loads and high density altitude or both are close to maximum allowable.

To hover taxi in any direction – forward, sideward, or rearward – the cyclic is inclined in the desired direction of flight. The ground speed should be no more than 10 mph for forward hover taxiing and no more than 5 mph in all other directions. Ground speed is controlled by the cyclic, Making cyclic control changes small and smoothly will minimize the effects of pendular action. Maintain heading with the pedals, altitude with the collective, and rpm with the throttle (reciprocating-engine powered helicopters).

Crosswind taxiing is accomplished much in the same manner as no wind hover taxiing except the cyclic is also used to control ground TRACK as well as ground SPEED. The cyclic must be inclined into the wind enough to cancel out any tendency for the aircraft to drift.

In all forward to rearward hover taxiing, the landing gear (skids or wheels) should be aligned with the flight path. This will provide for straight touchdowns in the event of power failure while taxiing.

ACCEPTABLE PERFORMANCE GUIDELINES:

With winds up to 30K, the trainee will be able to maneuver the helicopter in hovering flight within a 10-foot circle and/or 360 degree hovering turns and be able to control groundspeed while taxiing within 0-10 mph, altitude 2-5 feet AGL, and heading/track within +/-5 degrees.

No.3 Vertical Takeoff to a Hover

OBJECTIVE:

Practice of this maneuver will enable the trainee to transition the helicopter from the ground to a controlled hover.

DESCRIPTION:

The vertical takeoff to a hover is normally the beginning of each flight. The maneuver is one in which the helicopter is lifted vertically to a normal hovering altitude of approximately 3 feet (skid height). This should be accomplished with a minimum fore or lateral, and no aft, movement over the ground.

If possible, the helicopter should be headed into the wind; note, however, it can be accomplished safely by proficient pilots from any heading with winds up to 30K.

To begin the maneuver, increase the rpm to normal operating rpm with the throttle (full throttle with turbine powered helicopters). The collective should be completely DOWN and the cyclic control centered. A small amount of left pedal may be applied in anticipation of additional torque that will be created when power is increased. Note the aircraft attitude before beginning liftoff.

Raise the collective smoothly and slowly until the helicopter tries to move (helicopter light on skids). Neutralize any attempt of the helicopter to move with the cyclic control and pedals before continuing with UP collective. After neutralizing any movement or attitude change, continue with UP collective. The helicopter should rise vertically with little or not other movement. Maintain direction with pedals, rpm with the throttle (reciprocating engine powered helicopters), and position over the ground with the cyclic control. Altitude should be controlled with the collective.

Note: For each smooth and accurate control during liftoff, use pressures rather than abrupt control movements, and scan 50-75 feet from the helicopter rather than closer in.

ACCEPTABLE PERFORMANCE GUIDELINES:

The trainee shall demonstrate his ability to perform this maneuver maintaining the recommended rpm +/-50, the altitude 2-5 feet AGL, and heading +/-5 degrees. The helicopter shall remain within 5 feet of the liftoff spot in winds up to 30K.

No. 4 Vertical Landing From a Hover

OBJECTIVE:

With practice, the trainee will be able to accomplish a vertical descent from a hover to the ground with little or no movement over the ground.

DESCRIPTION:

This maneuver is used to terminate nearly every flight.

From a stabilized hover of approximately 3 feet skid height, lower the collective slightly to establish a slow rate of sink. Maintain rpm with the throttle (reciprocating-engine powered helicopters), direction with the anti-torque pedals and position over the ground with cyclic. As the helicopter gets close to the ground, ground effect may decease – even stop the rate of sink. As this occurs, proper application of down collective will continue a controlled descent.

At ground contact, continue to lower the collective smoothly until it is fully down. Maintain operating rpm until you are sure the helicopter will not move accidentally because of terrain. When aircraft is securely on the ground, reduce rpm as desired.

Note: If you encounter difficulty, start over from a stabilized hover.

CAUTION: Do not allow the helicopter to land with rearward or lateral movement.

ACCEPTABLE PERFORMANCE GUIDELINES:

The trainee will be able to perform the maneuver with no rearward or sideward movement. The heading will be controlled +/-5 degrees and rpm maintained within the recommended +/-50. Touchdown shall be made at a controlled rate of descent.

No.5 Normal Departure from Hover to Climb

OBJECTIVE:

When trainee is proficient in this maneuver, he will be able to transition the helicopter from hovering to climbing flight in a safe and efficient manner.

DESCRIPTION:

While at a 3-foot hover, execute a 90 degree turn to clear the area for takeoff.

Position the helicopter to the desired takeoff heading and check power required to maintain a 3-foot hover. Apply a small amount of forward cyclic to establish movement over the ground, while maintaining and altitude of 3 feet. As the helicopter starts to settle, because of a change in lift vector, apply sufficient collective pitch to stop settling. The helicopter begins its climb when effective translational lift is obtained, which is evident when the nose of the helicopter tends to pitch up. At this point, reduce collective pitch slightly and continue to apply forward cyclic to overcome the tendency of the nose to pitch up. As the helicopter starts to climb, adjust collective pitch to obtain normal climb power and establish an attitude that will allow a smooth acceleration to climb airspeed. The maneuver is complete when a climb has been established at climb airspeed and climb power. (If hovering in effective translational lift, begin the climb from a 3-foot stationary hover).

Note: Torque reaction is a function of power and airspeed. As airspeed increases for a given power setting, less left pedal is required. Maintain rpm (reciprocating-engine) with throttle. Maintain manifold pressure (reciprocating engine with collective). Maintain airspeed/attitude (climb established with cyclic). Maintain takeoff heading with anti-torque pedals. At approximately 50’ AGL, establish a crab necessary to maintain desired ground track.

ACCEPTABLE PERFORMANCE GUIDELINES:

Evaluation of the performance of this maneuver will be base upon accuracy and smoothness of control +/-5 degrees of desired heading and airspeed +/-5 mph of desired airspeed. Maintain rpm within the recommended +/-50.

No.6 Normal Approach to a Hover from Descent

OBJECTIVE:

Proficiency in this maneuver will enable the trainee to transition a helicopter from cruising flight to approximately a 3-foot hover.

DESCRIPTION:

A normal approach to a hover is the accepted way to transition from cruising flight to a hover.

The approach is a descent from an altitude of 3-5000 feet AGL on a constant angle of descent and at a constant airspeed of no less than best rate of climb airspeed until the helicopter is approximately 75 feet above the ground. From that point, a deceleration to zero groundspeed is accomplished along the same angle of descent timed so as to reach zero groundspeed as the helicopter reaches an altitude of approximately 3 feet AGL at the selected point of landing.

During the approach, the angle of descent is controlled with the collective pitch control – the airspeed and deceleration with the fore and aft cyclic control. Rpm must be controlled with the throttle, (reciprocating-engine powered helicopters), the ground track and heading with lateral cyclic. The pedals are used to counteract skidding caused by changes in torque.

The normal approach has an approach angle of approximately 12 degrees. It is begun, in training, from straight to level, aligned into the wind and at the desired approach airspeed.

The helicopter is flown straight and level until the sight picture for the twelve (12) degree angle is reached. At this time, lower the collective a small amount to initiate the descent. Adjust the cyclic as necessary to maintain the airspeed. Maintain the sight picture with the collective – for instance, if the intended landing spot appears to move up on the bubble, you are going low so raise the collective to return to proper angle and vice versa. If the airspeed is allowed to vary, errors in sight picture will also be evident, (e.g.) if the airspeed is excessive, it will appear as if you are going below the desired angle of approach and vice versa. A timely correction with cyclic control will prevent large errors from occurring if airspeed is incorrect.

The final phase of this approach – deceleration is begun when the helicopter is approximately 75 feet AGL. At this point, airspeed is no longer a consideration and all attention should be concentrated on the rate of closure of the helicopter to the intended point of landing.

DESCRIPTION (cont'd):

Move the cyclic gently aft to initiate the deceleration. A small amount of additional down collective will be necessary momentarily to prevent ballooning or over arcing the approach. If the rate of closure with the spot is CONSTANT, the helicopter will come to a stop at that point. If it is not, adjust the cyclic as necessary. As the airspeed decreases, the total lift decreases and power will have to be added (up collective) to maintain the angle of approach.

Note: Adding power (collective) will cause the rpm, in reciprocating engine powered helicopters, to decrease unless throttle is added in a timely manner.

The added power also requires more left pedal to offset the effects of the additional torque.

ACCEPTABLE PERFORMANCE GUIDELINES:

Evaluation of this maneuver will be base upon pilot maintaining the approximate angle of approach, the airspeed not to exceed 5 mph of selected airspeed, and the heading +/-5 degrees. Approach should terminate within a 10-foot circle of the selected landing spot using no more than a moderate flare. Maintain rpm within the recommended +/-50.

No.7 Crosswind Operations

OBJECTIVE:

Proficiency in these maneuvers will enable the trainee to take off and approach to a landing with a helicopter when operations into the wind are not feasible.

DESCRIPTION:

Crosswind departure and approach in helicopters are similar to the operation in fixed wing.

The primary difference in all crosswind vertical takeoffs and landings is that cyclic must be inclined into the wind and sufficient downwind pedal—to offset the tendency to turn—must also be applied. During these operations, the upwind skid will leave the ground last on a vertical takeoff and it will touch the ground first in vertical landing.

Normal takeoffs in crosswind utilize much the same technique as used by fixed wing aircraft; (e.g.) during the initial acceleration up to 50 feet AGL, the slip method is used (cyclic inclined into the wind to offset drift and opposite pedal applied as necessary to maintain heading). Above 50 feet, neutralize the controls and establish crab to maintain ground track.

Normal approached in a crosswind use the same procedures and techniques required in no wind except a crab is maintained until the final deceleration phase begins. At that time, revert to the slip method so as to align the skids with the flight path throughout the final phase of the approach.

ACCEPTABLE PERFORMANCE GUIDELINES:

In addition to guidelines established for no wind approached, all crosswind work will be evaluated on the basis of accuracy of a ground track. Lift-offs and landings with no lateral or aft movement with winds 90 degrees to the desired flight path/heading at velocities up to 30K. Headings within +/-5 degrees and position within a 10-foot circle.

No.9 High Altitude Takeoff

OBJECTIVE:

To enable the helicopter to become airborne when a hover cannot be sustained due to a heavy load or high density altitude. This maneuver provides practice in simulating the above conditions.

DESCRIPTION:

A procedure used to enable a helicopter to become airborne by using ground effect and transitional lift when the helicopter cannot sustain a hover because of a heavy load or high density altitude.

A running takeoff should be attempted only if the ground area is of sufficient length and smoothness, no barriers exist which would interfere with a shallow climb-out, and the helicopter can be hovered momentarily.

To establish the amount of power to be used, the aircraft is brought to a hover and manifold pressure required to hold a steady hover is noted, A simulated maximum power setting of one or two inches less than required to hover is used during this maneuver.

In turbine powered helicopters, the primary power instrument (temperature, torque, or N1) is checked at a hover and a reduction of approximately 5% torque is used to compute the simulated maximum power setting.

With the aircraft resting on the ground headed into the wind and rpm at the predetermined allowable setting, the collective is raised slowly as the cyclic is moved forward of neutral. The aircraft will begin to taxi forward and as translational speed is reached, a slight back pressure on the cyclic will lift the aircraft off the ground. An altitude not exceeding 10 feet must be maintained until climb speed is obtained. At this point, the cyclic is adjusted to hold climb airspeed and climb attitude to an altitude of approximately 50 feet. When reaching this altitude, the maneuver is discontinued and normal climb-out is established.

ACCEPTABLE PERFORMANCE GUIDELINES:

A. The trainee shall maintain control of the aircraft at all times
B. The heading shall be maintained at +/-5 degrees
C. RPM maintained at maximum allowable with +0 and –50 rpm

No.8 Autorotations

OBJECTIVE:

Practice of this maneuver will result in the trainee becoming proficient enough to make satisfactory touchdowns autorotations in a desired area and, if necessary, abort a practice autorotation with a power recovery without exceeding aircraft/engine limitations.

DESCRIPTION:

An autorotation is the technique applied in the event of an engine failure, some tail rotor failures and , as desired, rapid descents.
In practice, the maneuver will be entered in the same manner as if the engine had actually failed. During the autorotative glide, the collective will be fully down except when it is necessary to prevent rotor rpm overspeeds with some up collective and to cushion the landing after flare. All touchdowns are to be made with skids level and aligned with flight path. After instruction and practice to develop entry, glide, flare and touchdown techniques has been accomplished to the satisfaction of the instructor, all autorotations will be practiced with accuracy in mind. At no time, however, should accuracy take precedence over the primary objective of the maneuver (i.e.) a safe controlled touchdown.

Practice autorotations can be terminated at any time prior to touchdown by executing either a go-around or a power recovery. A power recovery differs from a go-around in that it is terminated in a 3-5 foot hover.

A) ENTRY

To enter an autorotation, decrease the throttle enough to “split the needles” and simultaneously lower the collective smartly to the full down position. The resultant loss of power will cause the nose of the helicopter to skid left in American-built helicopters so right pedal must be applied to keep the helicopter in trim. The cyclic should be used as required to attain the proper attitude for desired gliding airspeed.

B) GLIDE

Gliding air range is a function of airspeed. For each helicopter there is an optimum airspeed to get the longest distance for each foot of altitude lost. This airspeed should be used to reach the field; however, if there is no question of being able to reach a desired spot in the field, airspeed can be adjusted accordingly. In our training, we use the autorotative final approach airspeed recommended by the manufacturer as the “aim” speed, modifying it as necessary to achieve the desired results (range).

GLIDE *(cont'd)*

Autorotative gliding turns are accomplished in the same manner as powered flight turns (i.e.) they are primarily accomplished using cyclic only. Gliding turns will place more G loads on the aircraft which may result in the rpm over-speeding. This over-speeding tendency must be acknowledged and overspeeds prevented by using up collective as necessary. When the turn is completed, the collective must again be lowered to prevent under-speeding of the rotor. The decision to complete the maneuver to either a touchdown or power recovery should be made during the autorotative glide. If the decision is to touchdown, the throttle should be fully closed in helicopters with reciprocating engines and flight idle in turbine powered helicopters.

FLARE

Approach speeds of 50-60 mph and higher are excessive for touchdown, so this speed must be diminished to an acceptable value prior to touchdown. The degree of flare to be used is at the option of the pilot based upon the conditions he is faced with on any given autorotative approach. Flares are commonly classified as shallow, moderate, or full.

- The flare is used for two other important results besides reducing groundspeed. They are: Reduction of rate of sink, and an increase of rotor rpm (increases inertia of rotor system).
- In most light helicopters with average inertia in the rotor system, the flare is started at approximately 35-50 feet AGL. The flare is "built" until the desired results are realized and/or until the tail rotor is no less than 5 AGL.
- In no-wind conditions, a full flare should not normally be used unless it is necessary to avoid obstacles ahead of the aircraft. A moderate flare will result in the aircraft still moving at some groundspeed at touchdown (no wind).

TERMINATION

When the flare has progressed to the point that the tail rotor is approaching 5 feet AGL, apply a small amount of collective pitch. Apply forward cyclic as necessary to arrive at a skid-level condition at touchdown. When the skids are within approximately 3 feet AGL, continue with UP collective to cushion the landing. *DO NOT* pull enough collective to stop the descent at the same slow altitude. Best results are obtained if the use of the collective is aimed at REDUCING the rate of sink to obtain a relatively soft touchdown.

D) TERMINATION *(cont'd)*

During the touchdown, and throughout the landing slide/roll, maintain direction with pedals. Apply additional collective only if the helicopter tends to nose over. Lowering the collective after touchdown should be minimal until the motion has stopped (see note).

Note: Some helicopters have limitations which require the collective to be fully down at given rpm without regard to motion along the surface. This limitation should be respected and followed.

Alternate Termination Procedure-Power Recovery

Besides being a useful tool of the pilot/instructor to abort a practice, autorotative landing close to the ground, the power recovery termination is used by all helicopter pilots to feel the aircraft out in autorotative glides and flare effectiveness before committing themselves to a touchdown.

- On reciprocating powered helicopters and early in the autorotative descent, the collective should be placed fully down and the rpm adjusted to a fast idle.
- The power recovery is generally initiated after the flare is fully developed and it is completed while in the helicopter leveling process.
- The needles (rotor and engine rpm) should be joined promptly but smoothly prior to pulling any collective, if possible. Caution should be exercised at this point as the needle should not be joined if the rotor rpm is beyond or outside the engine limits. If this situation exists, some collective will be necessary to reduce rotor rpm to the maximum engine rpm value. As the collective is raised to stop the sink, the throttle is added as necessary to maintain operating rpm (reciprocating-engine powered helicopters). This may require repositioning of the left hand on the throttle to assure the capability of moving the throttle enough.

  Note: As collective is pulled, rotor rpm will decay rapidly. Apply more throttle to stop rpm loss before pulling additional collective.

ACCEPTABLE PERFORMANCE GUIDELINES:

Primary consideration will be given to entry, glide, flare, and touchdown techniques and accuracy given secondary consideration.

A) During the Approach

(1) The airspeed should be controlled +/-5 of desired speed
(2) The helicopter shall be properly coordinated.
(3) The selected flare shall be appropriate for the condition.

B) Termination Touchdown

(1) The skids shall be level at touchdown
(2) The skids shall be aligned with flight path.
(3) Initial contact with surface should be within a 50 foot diameter circle using a predetermined spot as the center of this circle.

C) Power Recovery

(1) Power recovery will be made without exceeding rpm limitations for the engine.
(2) Directional control in power recovery will be +/-5 degrees final approach heading.
(3) The helicopter will be at 3-5 foot hover at the completion of the maneuver.

No.10 Settling with Power

OBJECTIVE:

The demonstration of this maneuver will graphically show the dangerous results of operating at low airspeed, moderate to high power settings and high rates of sink. It will also demonstrate the proper prevention and recovery from this phenomena.

DESCRIPTION:

Settling with power is most dangerous when it happens at relatively low altitudes. It should be demonstrated at an altitude of at least 1500 feet AGL.

To enter the maneuver, adjust the power to approximately 5 inches MAP below hover power for reciprocating-engine powered helicopters (20% torque below hover power for turbine-powered helicopters). Momentarily hold altitude with aft cyclic until the airspeed approaches 20 mph. Allow the rate of sink to increase to 300 fpm or more as the attitude is adjusted to obtain an airspeed less than 10 mph. The aircraft will begin to shudder. Application of additional up collective will increase the vibration.

Since this maneuver can result in rates of sink in excess of 2000 fpm, prompt recovery should be initiated at the first signs.

There are two recovery techniques commonly used – the first is preferred because it results in the minimum loss of altitude during recovery. First apply forward cyclic to increase airspeed with simultaneous moderate reduction of power (collective). The recovery will be completed when the aircraft reaches effective translational lift airspeed (approximately 17 mph). Normal resumption of flight is recommended.

The second recovery technique is the simplest, however, it is also the most costly in terms of altitude loss during recovery. The technique is simply to enter autorotation. Settling with power cannot occur or continue if the helicopter is in autorotation. As previously mentioned, the high rate of sink incurred by the autorotation at slow airspeeds coupled with the high rate of sink developed in the maneuver itself will cause a loss of altitude in excess of 1000 feet or more during the recovery.

ACCEPTABLE PERFORMANCE GUIDELINES:

The trainee will be able to perform the recovery technique resulting in the minimum loss of altitude both as a recovery technique and as a preventative measure when the phenomena known as settling with power threatens. The maneuver will be practiced dual only.

No.11 Hovering – Upwind, Downwind, Crosswind, and Pattern Flying

OBJECTIVE:

These maneuvers provide practice and proficiency in the use of all controls in conditions other than the usual hovering with the aircraft headed into the wind.

DESCRIPTION:

In hovering flight, the cyclic controls the attitude of the aircraft, its direction of flight, and groundspeed. The collective throttle controls the rpm.

Bringing the aircraft to a hover and moving it forward or into the wind are maneuvers that have been described in the section entitled “Taxiing Hover”.

Before attempting sideward or rearward flight, care must be taken to clear the area of intended flight. This may be done by making 90 degree clearing turns.

To move the aircraft sideward or rearward, the cyclic is moved by a very slight pressure in the direction of desired flight. Small cyclic corrections must then be made to hold a constant groundspeed. For sideward flight, a reference point 90 degrees to the right or left in the direction of flight, or a reference line on the ground may be used. For rearward flight, a reference point or line directly in front of the aircraft may be used.

The pattern to be flown may be any one of a variety of squares, rectangles, circles, etc., which may be performed with a constant or changing heading as specified by the instructor.

During crosswind or downwind flying, the direction of flight, heading and groundspeed are maintained by proper control pressures; such as, cyclic into the wind, additional downwind pedal, and added compensations in adjustment of throttle and collective controls.

ACCEPTABLE PERFORMANCE GUIDELINES:

A) The trainee shall hover the aircraft on specified headings. Care should be taken to see that the limits of cyclic pitch control are not approached on crosswind and downwind headings, and that rearward airspeed limits are not exceeded.

B) The trainee shall maintain his heading within +/-5 degrees, and his altitude from 2-5 feet above the surface, within a 10-foot circle.

No.12 Hovering Turns

OBJECTIVE:

In a hover of 2-5 feet, turn the helicopter 180 degrees or 360 degrees while maintaining a position over the ground.

DESCRIPTION:

Establish a hover of 2-5 feet altitude. The maneuver is initiated by a smooth application of anti-torque pedal in the desired direction of the turn. A constant rate of turn is maintained by pedal pressure as necessary. Rpm in reciprocating engines will vary dependent upon direction or turn. Less throttle will be required for right turns, more throttle will be required for left turns to maintain rpm. Careful attention to rpm control is important as variations will affect hover altitude. Altitude is maintained with collective pitch control. The desired position over the ground is maintained with the cyclic control.

ACCEPTABLE PERFORMANCE GUIDELINES:

Performance will be rated on the basis of rate of turn, rpm control, and altitude from 2-5 feet, position maintained within a 10 foot circle, and heading within +/-5 degrees.

No.13 Rapid Deceleration

OBJECTIVE:

This maneuver develops precise coordination in the use of all cockpit controls while slowing the aircraft to a desired groundspeed, hover, or landing.

DESCRIPTION:

The maneuver is started with the aircraft headed into the wind at an altitude and an airspeed which will preclude:

(1) Penetration of the shaded areas of the *Height-Velocity* diagram throughout the maneuver

(2) Endangering the tail rotor during the flare

With the aircraft in forward flight, aft pressure is applied to the cyclic to start the maneuver. Immediately, and simultaneously upon recognizing the resultant tendency to climb, the collective is lowered to prevent ballooning, the throttle coordinated to maintain a constant rpm and right pedal is applied to maintain constant heading. As the airspeed decreases, additional aft cyclic must be applied as necessary to prevent settling in the tail-low attitude. As the desired groundspeed is approached, apply a small amount of forward cyclic. As the aircraft starts to settle, simultaneously apply UP collective, throttle, and left pedal to maintain rpm and heading; and allow leveling and gentle settling of the aircraft to a hover or to a vertical landing if desired.

ACCEPTABLE PERFORMANCE GUIDELINES:

The trainee must maintain proper control of power, direction (+5 degrees), attitude, and altitudes +/-10 feet to terminate the maneuver within a designated 25-foot circle.

No.14 Confined Area Operations—Steep Approach, Takeoff & Aborted Takeoff

OBJECTIVE:

The above maneuvers are demonstrated by the instructor to acquaint the student with aircraft performance in critical areas where standard operation would not surface.

DESCRIPTION:

Steep Approach

In the steep approach into the wind, a high angle of descent is used. The degree of approach angle is decided by the height of obstacles to be flown over, by the airspeed and rate of descent that can be maintained, and by the amount of ground space into which the aircraft is to be maneuvered. The steep approach angle, airspeed and rate of descent are controlled in the same manner as the normal approach; that is, by close attention to adjustments of collective and cyclic controls. The amount of airspeed will usually be less than normal and will be dictated by the angle of descent and the amount of wind.

- If the ground space is so short and the obstacles so high that the angle of approach necessary would result in airspeed less than 10 mph, extreme care must be exercised to avoid settling with power.
- As the aircraft approaches the ground in a steep approach, the airspeed will be so low, so the pilot must add collective and rpm a little earlier than in normal approach.

Confined Area Takeoff

This maneuver is used when departing an area that is confined by natural or man-made obstructions. The takeoff should be made as close to a normal takeoff as possible considering the situation at hand. The flight path during the takeoff should follow an imaginary line from the front of the helicopter—when in position for takeoff—to the top of the obstacle, allowing sufficient space for tip path plane clearance. Maximum use of ground space available must be made by placing the aircraft as far downwind as possible.

- With rpm set at maximum allowable, the collective is raised to make the aircraft “light on the landing gear”. At this time, the cyclic is moved slightly forward of neutral and collective is raised to a point so that a gradual departure from the ground, along the desired flight path is obtained. In helicopters (reciprocating-engine) with limited power, it may become necessary to maintain rpm with the collective once full throttle is obtained.
- If, during the takeoff, it becomes apparent that sufficient power is not available to clear the obstacle, the takeoff should be aborted.

(Cont'd)

In helicopters (turbine engine) with limited power, turbine temperature, N1 speed, torque, and N2 speed must be monitored to eliminate exceeding the allowable limits. If during the takeoff, it becomes apparent that the obstacle will not be cleared without exceeding these limits, the takeoff should be aborted.

- During the takeoff, the cyclic is adjusted so as to allow the aircraft to clear the obstacles, and anti-torque pedal is applied to maintain heading.
- The entire maneuver is conducted into the wind, or as nearly so as possible to take advantage of the translational lift available.

C) ABORTED TAKEOFF

During the attempted takeoff from the confined area, it may become apparent that sufficient power is not available to clear the obstacle. At that point, the pilot should move the cyclic slightly aft and lower the collective slightly, maintaining rpm. The aircraft should be flown backward, down to the Revision #8 point of takeoff or back to an area known to be suitable for landing. The collective should not be lowered to a degree that would establish a high sink rate, nor should it be held up to the degree that rpm could not be maintained. The desired flight path would normally be the same as takeoff, but in the opposite direction.

Note: Prior to takeoff, it is important that the pilot note his takeoff position by a reference on the ground. This would be a guide, allowing him to land the aircraft at the takeoff point. This maneuver will initially be practiced in an open area until the trainee displays a high degree of proficiency.

ACCEPTABLE PERFORMANCE GUIDELINES:

This maneuver will *NOT* be practiced solo.

No.15 Pinnacle/ Rooftop Operations

OBJECTIVE:

These operations provide training and practice in approaching, landing, and departing from elevated areas (pinnacles/rooftops).

DESCRIPTION:

A pinnacle is an area from which the ground drops away steeply on all sides. A rooftop or elevated platform is a landing area on top of a structure which can vary from a height of a few feet above the surrounding surface to several hundred feet above the surrounding surface.

A) Pinnacle/Rooftop Approach

Having selected an upwind approach path to the landing area, initiate the approach from an altitude of 3-5000 feet above the landing area on an angle of approximately 12 degrees (normal approach angle) at the best rate of climb speed or higher. Maintain airspeed until the point on the approach is reached where, through evaluation of apparent groundspeed, it is determined that forward speed must be progressively decreased in order to arrive at hovering altitude of 2-5 feet at the intended landing spot with zero ground speed. The approach should be made to the forward edge of the landing area, keeping in mind main rotor and tail rotor clearance if obstacles exist.

- During strong and gusty wind conditions, a steeper than normal approach should be used.

B) Departure from Pinnacle/Rooftop

An “airspeed over altitude” takeoff is made because the takeoff area is higher than the surrounding terrain. Gaining altitude on takeoff is of secondary importance to gaining a safe airspeed. From a 3-foot hover, the takeoff is made the same as a normal takeoff; except a climb is NOT initiated until approaching the desired climb speed.

ACCEPTABLE PERFORMANCE GUIDELINES:

Evaluation of the execution of this maneuver will be based upon the pilot maintaining the approximate desired angle of approach, the airspeed not to exceed 5 mph of selected airspeed and heading within +/-5 degrees. Approach should terminate within 10 feet of the selected landing spot, using no more than a moderate flare. Departure altitude from a 3-foot hover will be –0 and +5 feet.

No.16 Engine Failure in Hover

OBJECTIVE:

Proficiency in this maneuver will provide the pilot with the ability to land the aircraft safely in the event of engine failure near the ground.

DESCRIPTION:

The maneuver is initiated with the aircraft in a steady hover at approximately 2-3 feet above the ground headed into the wind. When in this position, the throttle is rapidly retarded to the fully closed position in reciprocating engine powered helicopters (flight idle in turbine powered helicopters) and right pedal is applied to reduce the anti-torque effect of the tail rotor. Only enough right pedal to maintain heading is used. The collective is not moved until the aircraft begins to settle toward the ground at which time a positive application of sufficient collective to cushion the landing is made. A level altitude is maintained during the entire maneuver with cyclic control. After the aircraft is on the ground, the collective is lowered to full down position.

ACCEPTABLE PERFORMANCE GUIDELINES:

A) The trainee shall satisfactorily land the aircraft from a hover with the throttle closed without permitting excessive side-loads to the landing gear.

B) The trainee shall maintain the heading with +/-5 degrees and touchdown in a level attitude with no appreciable rotational movement of the aircraft.

No.17 Slope Operations

OBJECTIVE:

These operations provide training and practice in accomplishing a vertical descent from a hover to a sloping surface, and takeoff from a sloping surface vertically to a 3-foot hover.

DESCRIPTION:

This maneuver is used to terminate a flight when landing area is not level.

- From a stabilized hover of approximately 3 feet, skid height and cross-slope, lower the collective slightly to establish a slow rate of sink. Maintain rpm with the throttle (reciprocating-engine powered helicopters); direction with the anti-torque pedals; and position over the ground with cyclic. As the up-slope skid touches the ground, apply cyclic stick pressure in the direction of the slope (up-slope). This will hold the skid against the slope while the helicopter is continuing to be let down with the collective pitch. As the collective pitch is reduced, continue to move the cyclic stick toward the slope to maintain a fixed position. The slope must be shallow enough to allow the pilot to hold the helicopter against it with the cyclic stick during the entire landing.

Note: A slope of approximately 5 degrees is considered maximum for helicopters.

After the down-slope skid is on the ground, continue to lower the collective pitch all the way to the bottom. Rpm should be maintained until the full weight of the helicopter is on the ground. Anti-torque pedals should be used as necessary throughout the landing to maintain heading.

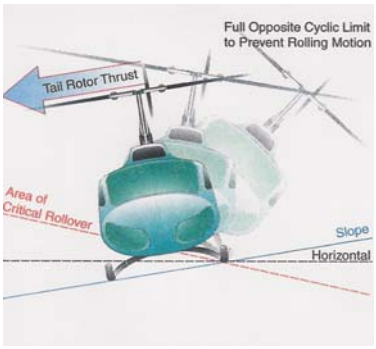
- The procedure for slope takeoff is almost the exact reverse of that for a slope landing. The cyclic stick should be positioned into the slope so the rotor disc is parallel to the horizon, or tilted slightly into the slope. As the helicopter becomes light on the skids, apply anti-torque pedals as necessary to maintain heading. When the down-slope skid starts to rise from the ground, adjust the cyclic as necessary to maintain the rotor disc on the horizon. As the down-slope skid rises to a level attitude, the cyclic stick should be approximately neutral. Continue to apply UP collective, allowing the helicopter to rise vertically to an approximate 3-foot hover.

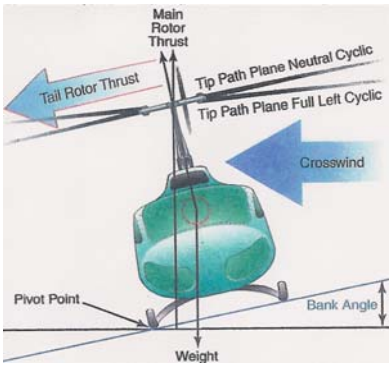
Note: During slope operations, *NEVER* turn the tail rotor up-slope.

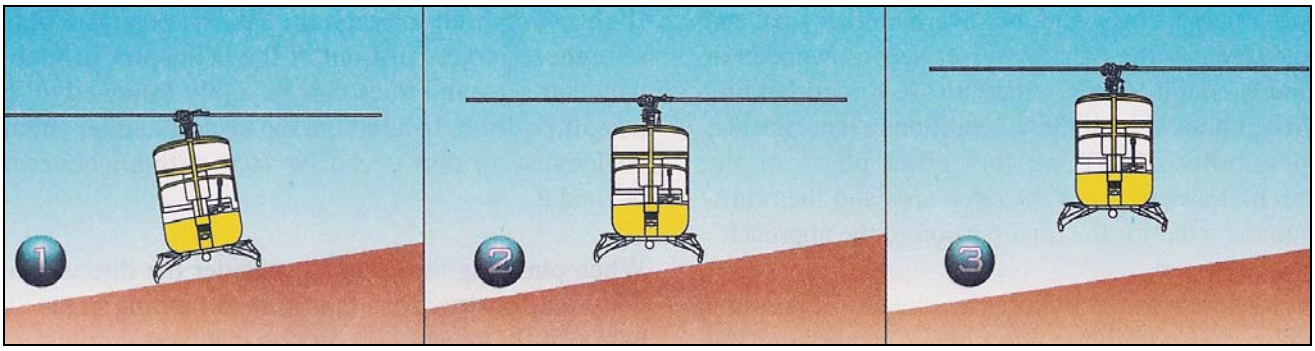
ACCEPTABLE PERFORMANCE GUIDELINES:

The trainee shall demonstrate his ability to perform this maneuver, maintaining the recommended rpm +/-50, the altitude 2-5 feet AGL, and heading +/-5 degrees. The helicopter should not slide down-slope during the landing or takeof

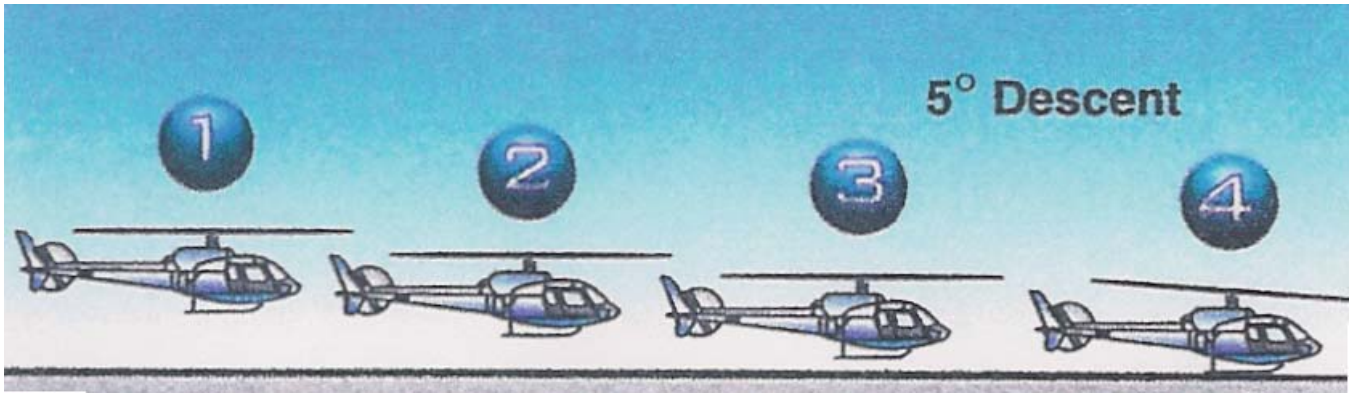
Slope Landings/Takeoffs (Dynamic Rollover)



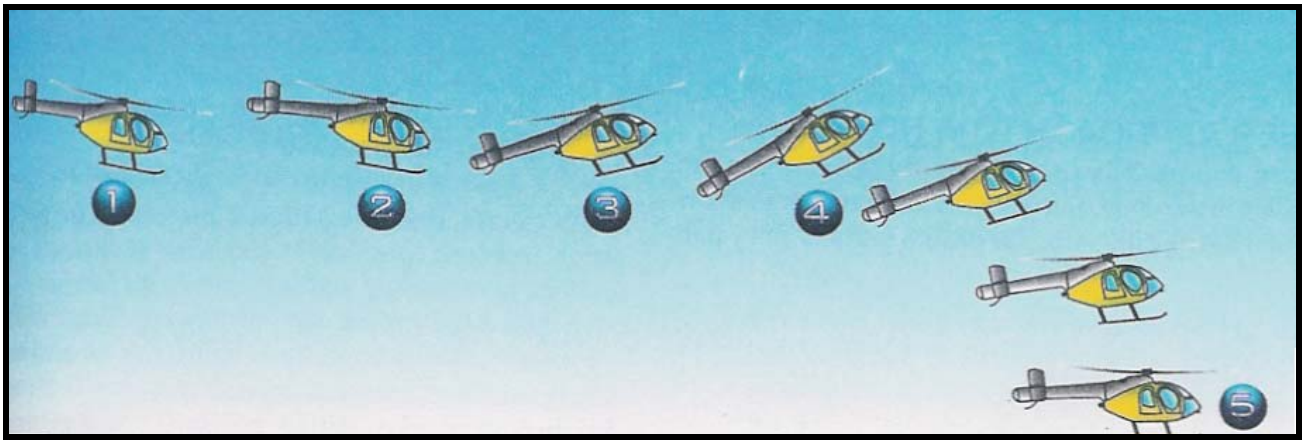




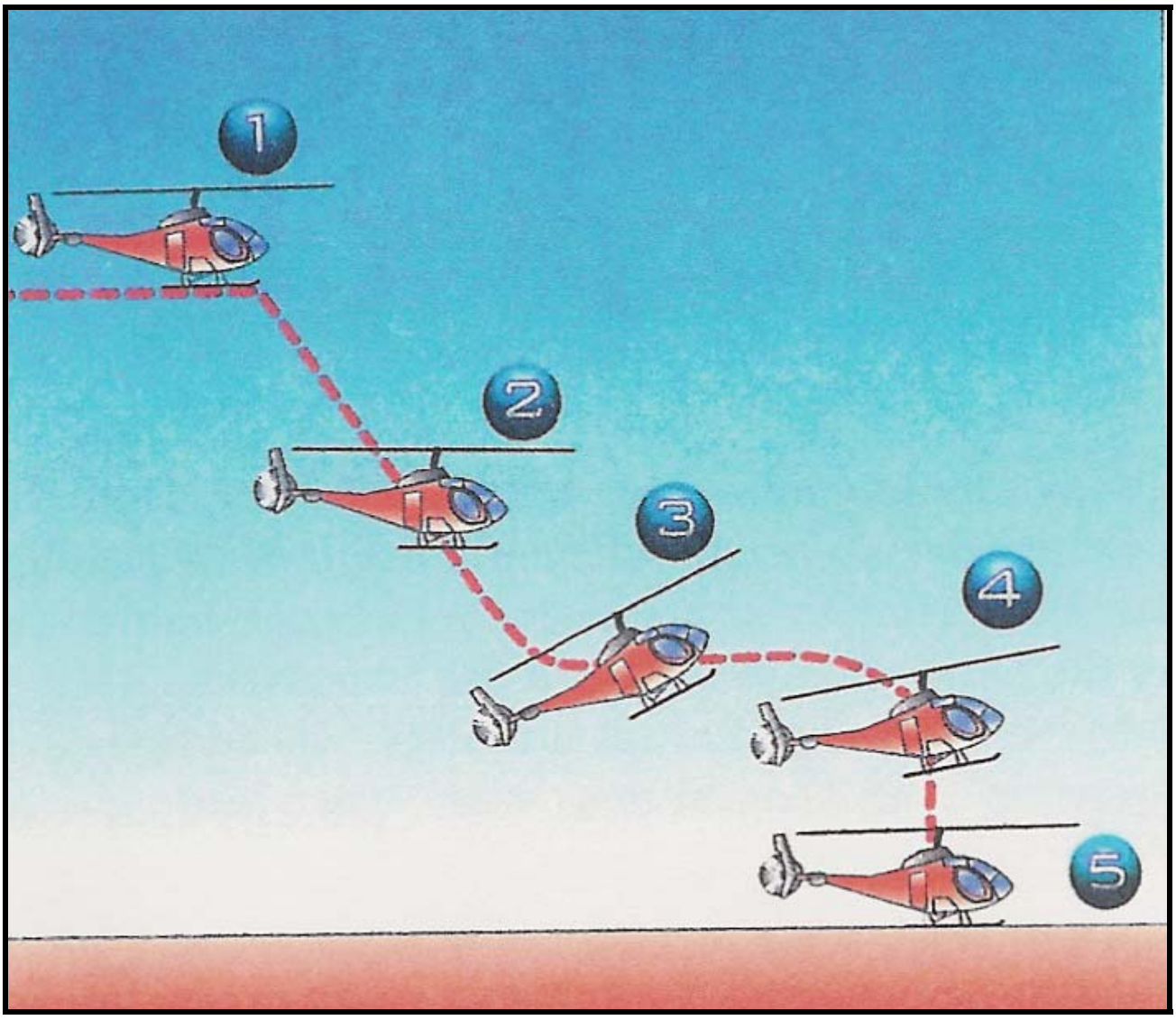
Shallow Approach to Landing



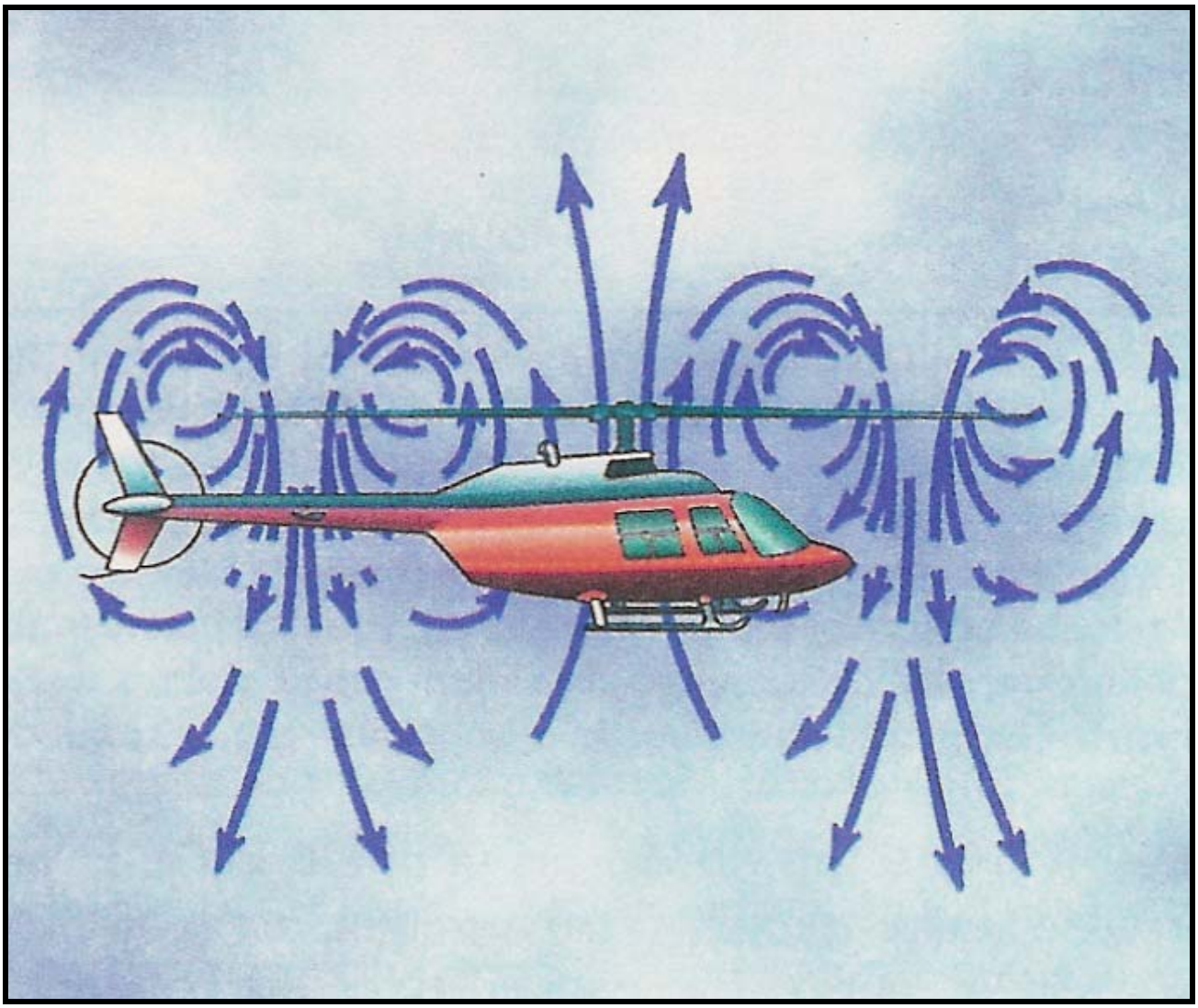
Rapid Decelaration (Quick Stop)



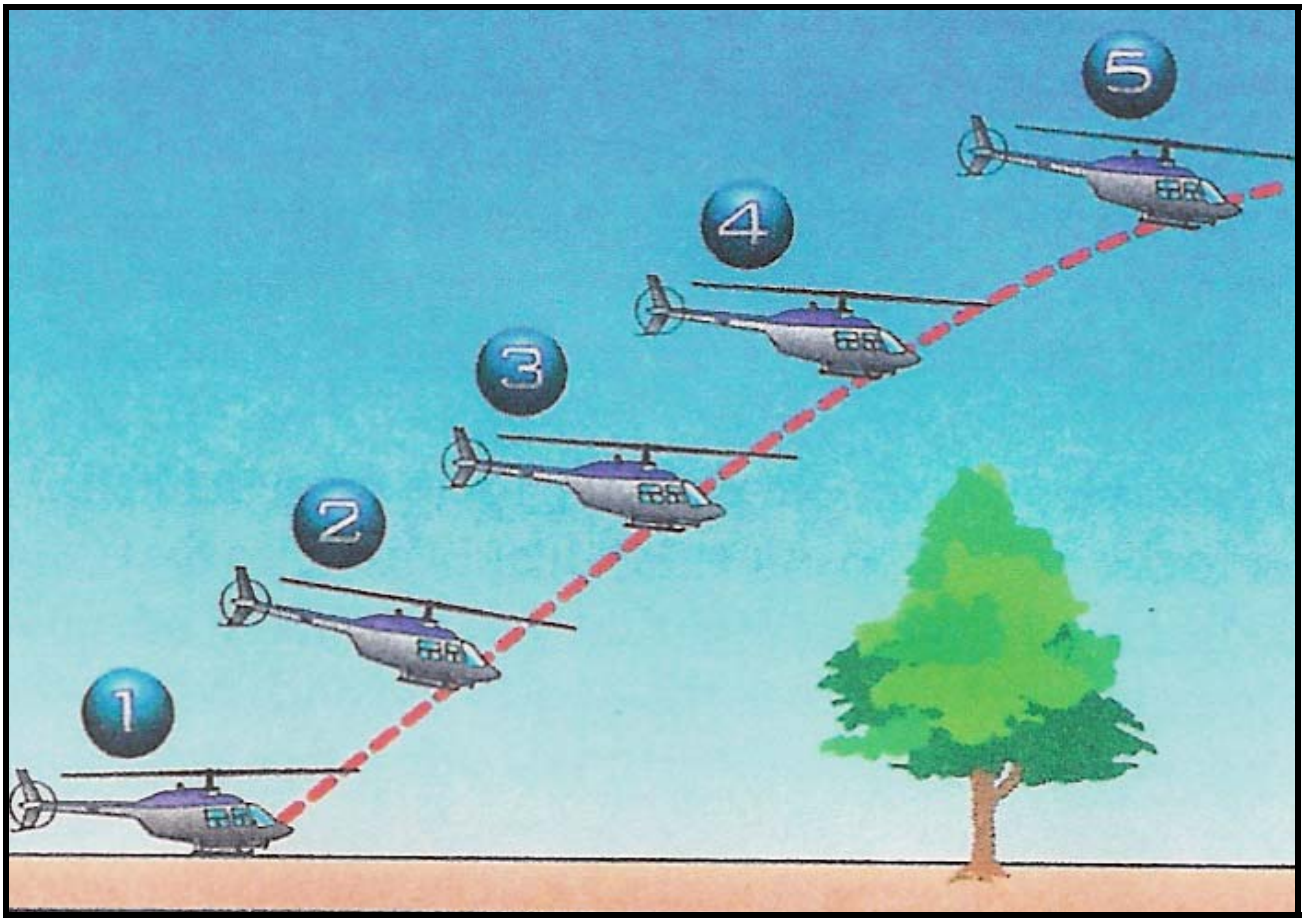
Accuracy Autorotations



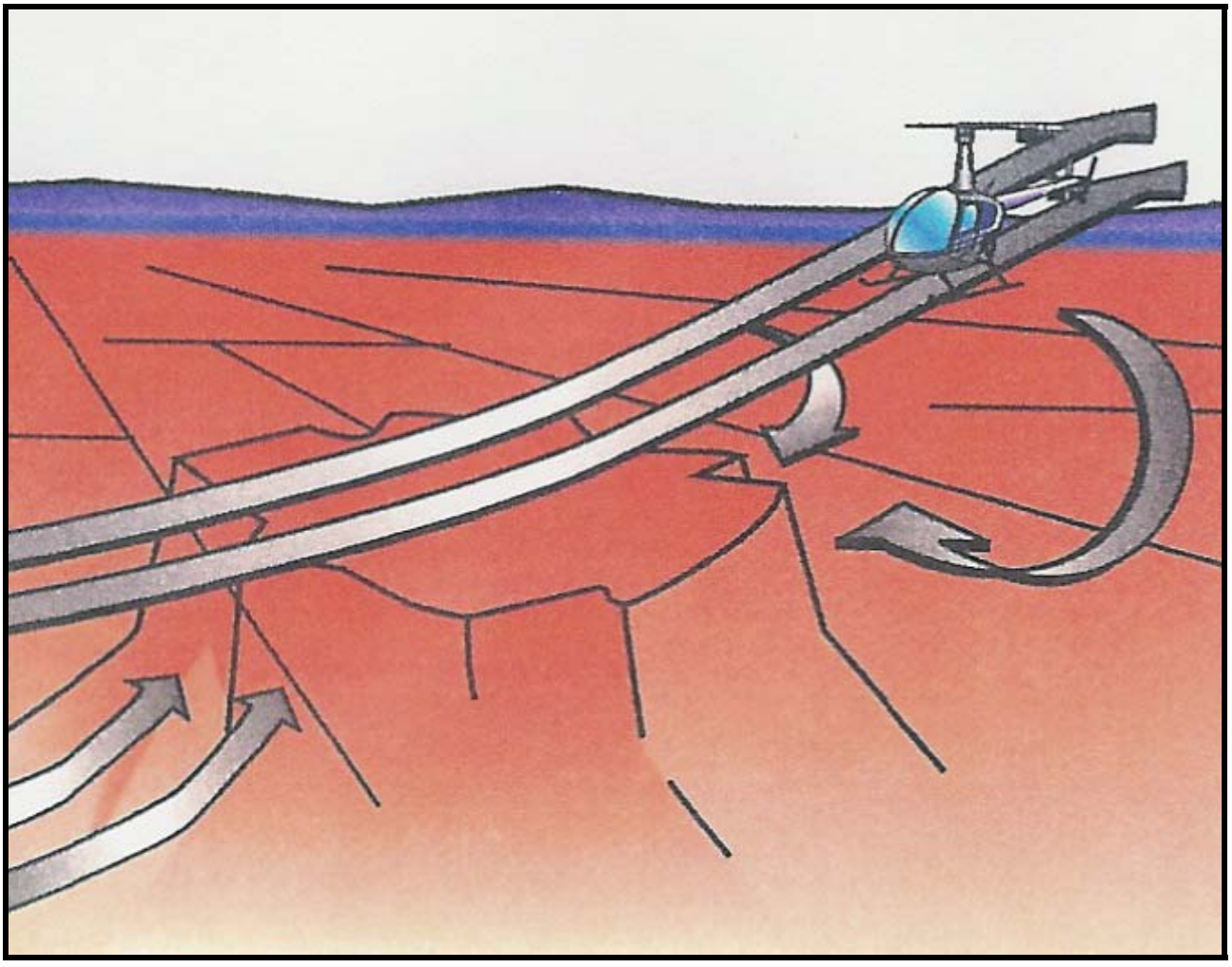
Settling with Power



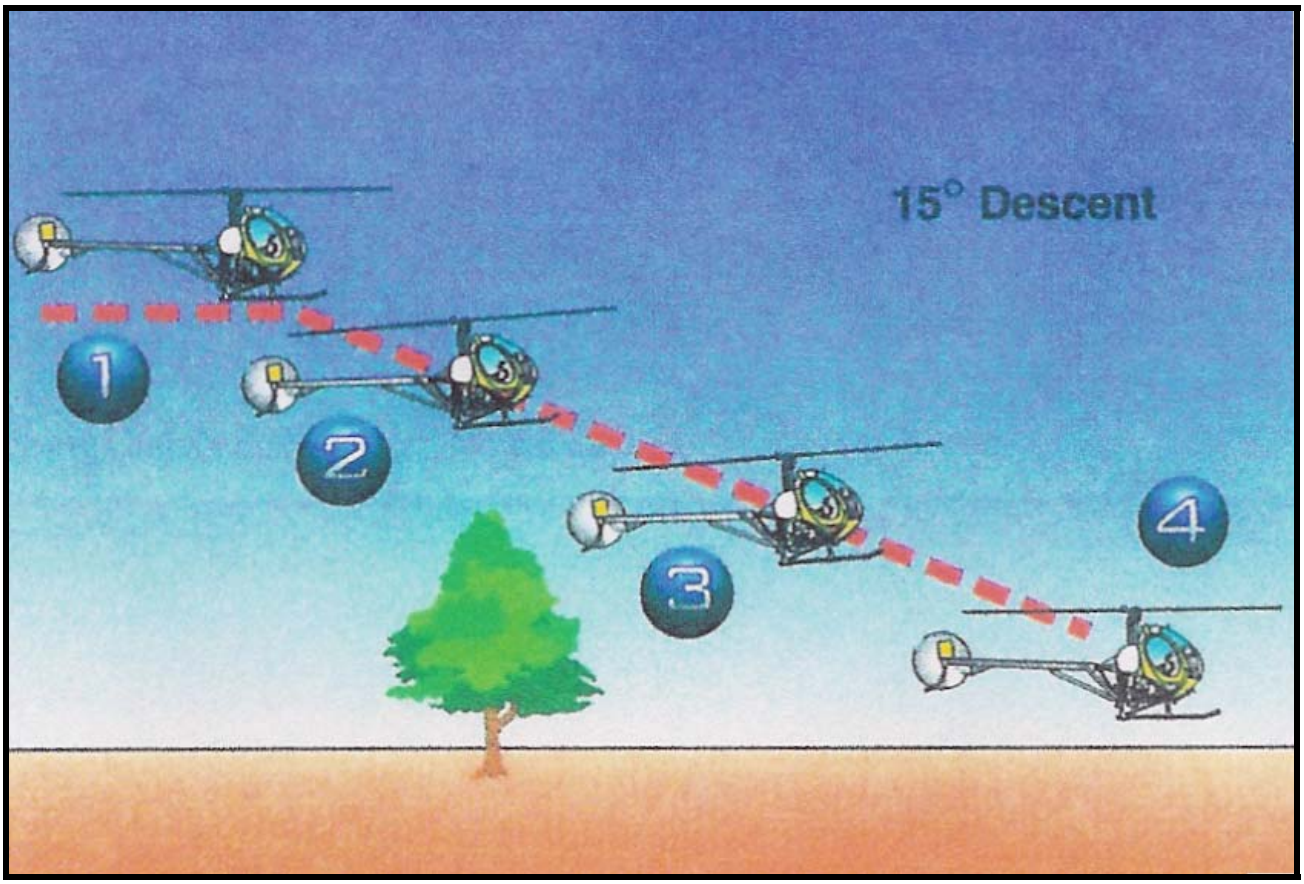
Maximum Performance Takeoff



Pinnacle/Rooftop Operations



Confined Area (Steep Approach)



No.18 **Category "A" Takeoff** (Multiengine Only)

OBJECTIVE :

To enable the pilot to operate the helicopter within the takeoff parameter of category "A" for the specific areas that it will be departing from

DESCRIPTION :

NOTE: These procedures require that the helicopter be able to maintain a single engine 150 FPM rate of climb capability at best rate of climb speed while at an altitude of 1000 feet above the takeoff surface with the engine operating at takeoff power. All configurations may be used while operating in this category.

A) CATEGORY "A" VERTICAL OPERATION FROM GROUND LEVEL

S-61

(1) Hover with 2-5 foot wheel clearance.
(2) Co-pilot sets altimeter to zero or to nearest thousand feet while in a hover.
(3) Pilot applies collective smoothly so that each torque-meter indicates a torque value as determined for helicopter takeoff gross weight.
(4) The co-pilot will call out the following during the vertical climb:
  (a) At 20 feet indicated: "20 feet"
  (b) At 40 feet indicated: "40 feet"
  (c) At 50 feet indicated: "50 feet"
(5) At the indicated CDP of 50 feet, transition to forward flight to obtain a desired forward speed of 67 knots IAS while climbing to the desired altitude.

B) CATEGORY "A" VERTICAL OPERATION FROM ELEVATED HELIPORT

(1) Hover with 2-5 foot wheel clearance.
(2) Co-pilot sets altimeter zero feet or to nearest thousand feet while in a 2-5 foot hover.
(3) Pilot applies collective smoothly so that each torque-meter indicates a torque value as determined for helicopter takeoff gross weight.
(4) The co-pilot will call out the following during the vertical climb:
  (a) At 20 feet indicated: "20 feet"
  (b) At 30 feet indicated: "Rotate"
(5) At the indicated CDP of 50 feet, transition to forward flight to obtain a desired forward speed of 67 knots IAS while climbing to the desired altitude.

C) CATEGORY "A" HOVER TAKEOFF

(1) Hover up to 10 foot wheel height.
(2) AFCS meter selector switch-P (pitch). Adjust indicator to neutral by combining movement of CG trim knob and cyclic in stationary hover.
(3) Engine control levers—Full forward but not to exceed 106% Nr with matched torques.
(4) Accelerate to climb-out speed of 20 knots IAS.
(5) At the CDP, 50 feet indicated altitude, accelerate to best rate of climb (BROC) speed.
(6) Retract landing gear during climb-out.

ACCEPTABLE PERFORMANCE GUIDELINES :

The check pilot determines that the applicant:

(a) Exhibits commercial pilot knowledge by explaining the elements of a category "A" takeoff.
(b) Initiates maneuver properly.
(c) Maintains heading, +/-15 degrees.
(d) Maintains RPM within normal limits.

No.19 Category "A" Takeoff with Powerplant Failure *before* CDP
(Multiengine Only)

OBJECTIVE :

To enable the pilot to operate the helicopter with powerplant failure while performing a category "A" takeoff.

DESCRIPTION :

NOTE: These procedures require that the helicopter be able to maintain a single engine 150 FPM rate of climb capability at best rate of climb speed while at an altitude of 1000 feet above the takeoff surface with the engine operating at takeoff power. All configurations may be used while operating in this category.

A) GROUND LEVEL AND ELEVATED HELIPORT

An engine failure prior to reaching the altitude associated with the CDP will necessitate a rejected takeoff. The landing is accomplished by descending vertically or with a slight forward motion when possible, while maintaining 100% rotor speed during the descent. Begin slow collective application at 20 to 30 feet above the ground as necessary to cushion ground contact. At ground contact, stop any ground roll with brakes and cyclic stick.

ACCEPTABLE PERFORMANCE GUIDELINES :

The check pilot determines that the applicant:

(a) Exhibits commercial pilot knowledge by explaining the elements of a category "A" takeoff with engine failure prior to CDP.
(b) Initiates maneuver properly.
(c) Maintains heading, +/-15 degrees.
(d) Maintains RPM within normal limits.

No.20 Category "A" Takeoff with Powerplant Failure *after* CDP
(Multiengine Only)

OBJECTIVE :

To enable pilot to operate the helicopter with powerplant failure while performing a category "A" takeoff.

DESCRIPTION :

NOTE: These procedures require that the helicopter be able to maintain a single engine 150 FPM rate of climb capability at best rate of climb speed while at an altitude of 1000 feet above the takeoff surface with the engine operating at takeoff power. All configurations may be used while operating in this category.

A) At or subsequent to the CDP, the following procedure applies:

(1) Collective pitch lever—allow rotor to droop to at least 94%, but not less than 91% Nr.
(2) Simultaneously apply forward cyclic to rotate helicopter to approximately 20 degree nose down and accelerate to takeoff safety speed (VTOSS) of 57 knots IAS. At approximately 45 to 50 knots IAS begin decreasing nose down attitude.
(3) After achieving takeoff safety speed, accelerate Nr to 100%.
(4) Continue climb-out at takeoff safety speed or accelerate to BROC speed.

ACCEPTABLE PERFORMANCE GUIDELINES :

The check pilot determines that the applicant:

(a) Exhibits commercial pilot knowledge by explaining the elements of a category "A" takeoff with engine failure after CDP.
(b) Initiates maneuver properly.
(c) Maintains heading, +/-15 degrees.
(d) Maintains RPM within normal limits.

No.21 Balked Landing

OBJECTIVE :

To enable pilot to initiate a go-around as deemed necessary.

DESCRIPTION :

SINGLE ENGINE/MULTIENGINE

During a pinnacle/confined area approach or any other approach where the pilot believes that he may not be able to make a successful landing, he should anticipate to make a go-around. Under these conditions, the pilot should make a relatively slow approach carrying as much power as possible and if necessary, when he starts the go-around, he should do so before passing through effective translational lift (ETL) or descending below any obstacles in his departure/go-around path.

MULTIENGINE WITH ONE ENGINE INOPERATIVE

During an approach at the point where the aircraft has an engine failure at or prior to the Landing Decision Point (LDP), aircraft may initiate a balked landing (go-around) through the following procedures:

- Helicopter will accelerate to single engine inoperative takeoff safety speed (VTOSS) and accomplish a safe single engine climb-out, then proceed to do a single engine landing.

ACCEPTABLE PERFORMANCE GUIDELINES :

The check pilot determines that the applicant exhibits commercial pilot knowledge by:

(a) Explaining and demonstrating a go-around (balked landing).
(b) Conducting a go-around without exceeding any power limitations (except in an emergency situation) and using the BROC or VTOSS airspeed until a safe altitude is reached.

No.22 Rejected Takeoff

OBJECTIVE :

To enable the pilot to initiate a rejected takeoff as deemed necessary.

DESCRIPTION :

Should for any reason a takeoff be aborted, the pilot should initiate a quick-stop maneuver and terminate at a 3-5 foot hover. Advise ATC of the rejected takeoff (if applicable).

ACCEPTABLE PERFORMANCE GUIDELINES :

The check pilot determines that the applicant:

(a) Exhibits commercial pilot knowledge by explaining the elements of a rejected takeoff.
(b) Initiates the maneuver properly.
(c) Decelerates and terminates in a stationary hover at recommended hovering altitude.
(d) Maintains heading +/-15 degrees.

No.23 Loss of Anti-Torque Effectiveness/Anti-Torque Failure

OBJECTIVE :

To enable the pilot to initiate the appropriate anti-torque failure procedure as deemed necessary.

DESCRIPTION :

NOTE: Due to the varied nature and procedure of anti-torque malfunctions, refer to the appropriate Rotorcraft Flight Manual for procedures.

ACCEPTABLE PERFORMANCE GUIDELINES :

The check pilot determines that the applicant exhibits commercial pilot knowledge by explanation and demonstration of all the above types of tail rotor emergency procedures.

No.24 Obstacle Clearance Takeoff (Maximum Performance)

OBJECTIVE :

To enable the pilot to initiate the appropriate anti-torque failure procedure as deemed necessary.

DESCRIPTION :

Clear the aircraft left, right and overhead, then complete a before-takeoff check (RPM/N2, Warning/Caution lights, instruments). Select a reference point(s) along the takeoff path to maintain ground track.

- Begin the takeoff by getting the helicopter light on the skids. Pause and neutralize all aircraft movement. Slowly increase the collective and position the cyclic so as to break ground and maintain a 47mph (40kt) attitude (approximately the same attitude as when the helicopter is light on the skids). Continue to slowly increase the collective as much as necessary to clear the obstacles.
- This large collective movement will require a substantial increase in left pedal to maintain heading. The pilot must closely monitor the RPM/N2 when operating within the high power range in order to maintain 100%. The N2 Governor might not be as effective at higher power settings, requiring the pilot to maintain RPM with N2-beeping.
- At 50 feet of altitude, slowly lower the nose to a normal 60kt attitude (69 mph). As the airspeed passes 50kt (58 mph), reduce the collective to normal climb power.

ACCEPTABLE PERFORMANCE GUIDELINES :

The check pilot determines that the applicant:

(a) Exhibits commercial pilot knowledge by explaining the elements of a maximum takeoff/obstacle clearance takeoff
(b) Performs a ground reconnaissance to :
    1. Evaluate wind and obstructions.
    2. Select a proper takeoff point.
    3. Plan a safe hover taxi.
    4. Place ground markers if required.
(c) Performs a proper takeoff, safely clears obstructions, and tracks the pre-selected departure path.
(d) Maintains RPM within normal limits.

SECTION 6

TABLE OF CONTENTS

6.1. RECORDKEEPING

A. The Director of Operations or the Chief Pilot will assemble and keep on file a training folder for each individual as required by the appropriate regulation. In that training file will be kept grade slips of training courses completed. In the case of recurrent check requirements, the initial and most recent will be on file. In addition a record of all initial and recurrent training will be established and maintained. Information required to be maintained for each pilot used under this part includes but is not limited to:

1. The full name of the pilot.
2. The pilot certificate, by type and number, and ratings that the pilot holds.
3. The pilot's aeronautical experience in sufficient detail to determine the pilot's qualifications to pilot the aircraft in operations under this part.
4. The pilot's current duties and the date of the pilot's assignment to those duties.
5. The effective date and class of the medical certificate that the pilot holds.
6. The date and result of each of the initial and recurrent competency tests and proficiency and route checks required and the type of aircraft flown during that test or check.
7. The pilot's flight time in sufficient detail to determine compliance with the flight time limitation of FAR 135, Subpart F.
8. The pilot's check airman authorization, if any.
9. Any action taken concerning the pilot's release from employment for physical or professional disqualification.
10. The date of the completion of the initial phase and each recurrent phase of training.

B. In accordance with FAR 135.323(c), each segment of training (ground, flight, course of training, proficiency or competency check) shall be certified by the applicable ground instructor, flight instructor or check airman as to the proficiency and knowledge of the crewmember upon completion of the training or check. This certification will be a part of the crewmember's training record.

1. The Director of Operations or Chief Pilot will maintain a record of the satisfactory completion of initial and recurrent training given crewmembers and appropriate personnel who perform assigned duties and/or have responsibilities for the handling and carriage or recognition of Hazardous Materials, as appropriate.

C. Sample copies of forms and certificates of training are provided in this section of the manual.

D. "IOE" documentation will be maintained in the permanent section of this record.

1. A line qualified instructor who conducts a classroom subject within a course, a complete course of ground training, or emergency drills required within this approved AIRCREW TRAINING PROGRAM will be considered to have completed that subject, course, or drill for their own training requirement. Such credit shall be certified by the Chief Pilot or Director of Operations. *In no case will a person sign their own training record*.

E. All completed record forms pertaining to the initial qualification requirements (ie. Basic Indoc., Initial Equipment, etc.) will be maintained in their Revision #8 state in the crewmember's record file. Subsequent records (ie. recurrent training) that must be retained beyond twelve (12) months may be reduced to a single-line entry in the individual's file folder. The single-line entry may be made once the twelve month period lapses and must include the individual's name; date of completion; training course or course flight check; results; follow-up after unsatisfactory performance (if required); and the name of the certifying official. All purged grade slips will be maintained in a separate Smith file for personal use only.

F. A score of 100% constitutes satisfactory completion of a written examination. SAT entered in the results column indicates that the crewmember scored 100% on course examinations.

6.2. AIRMAN COMPETENCY/PROFICIENCY CHECK FORM

To assure complete and accurate compliance with the Proficiency Check procedures set forth in FAR 135.293, .297, .299, the check airman conducting the check will complete the appropriate sections of FAA Form 8410-3 AIRMAN PROFICIENCY/QUALIFICATION CHECK.

The completed form will be inserted into the crewmember's record file.

If the proficiency check is given in lieu of recurrent flight training, a statement to that effect will be completed and signed by the check airman. This statement will be made in the REMARKS section of the proficiency check form.

Where the FAA Principal Operations Inspector is conducting or observing a flight check, their statement may be entered as well.

A copy of the FAA Form 8410-3 completed by a Check Airman will be forwarded to the Principal Operations Inspector assigned to this company within five working days.

6.3. TRAINING FORMS

Pilot Annual Resume The Pilot Annual Resume is self explanatory. It meets the requirements of Part 135.63(a)(4).

(TR-1) The **Record of Training** form must be placed in the crewmember's record file and it meets the requirements of Part 135.63(a)(4). This form must be completed by the Director of Operations or Chief Pilot in order to meet certification requirements of the regulations.

(TR-2) The **I.O.E./Line Check** form is a record of Part 135.299 route qualification by an airman. While it may be, this form is not required to be placed in the crewmember's record file, it is for company use only.

(TR-3) The **Single-Line Record** Entry Form form provides for a quick reference of all Categories of Training accomplished, and presents a historical record of all required training.

(TR-4) The **Instructor/Check Airman Qualification Record** form determines instructor or check airman Training qualifications.

(TR-5) The **Credit for Previous Training Record** form provides a means of documenting credit that has been granted due to previous training received prior to the crewmember being hired.

(TR-6) The **Flight Training Record** form provides a means of documenting and tracking flight training that has been received by each crewmember.

6.4. PILOT ANNUAL RESUME

*** Attach copy of medical certificate and pilot certificates ***

Date: _____

Name: _____ Pilot Cert.: Comm. [ ] ATP [ ]
(first) (middle) (last)

Address: _____ Cert. No.: _____
City/State: _____ Ratings: _____
Home Phone:( )_____ _____
_____

Date Hired: _____

Flight Time Summary

Tot. Time:_____ X-Country: _____ Instrument: _____
Twin Heli:_____ Total Night:_____ Hood:_____
Night X-C:_____ Helicopter: _____ Actual:_____
Commercial Prev. 12 mo.:_____ Previous mo.:_____

Flight Duty Assignment

Make/Model	Duty Position	Signature	Date
_____	PIC [ ] SIC [ ]	_____	_____
_____	PIC [ ] SIC [ ]	_____	_____
_____	PIC [ ] SIC [ ]	_____	_____
_____	PIC [ ] SIC [ ]	_____	_____
_____	PIC [ ] SIC [ ]	_____	_____
_____	PIC [ ] SIC [ ]	_____	_____
	Chief Pilot	_____	_____
	Check Airman _____		_____

Pre-employment pilot safety background information verification .
_____

I certify the information above is correct and has been verified. Date

_____ _____ _____
Date Signature Title

6.5. RECORD OF TRAINING

(TR-1)

NAME:	**DUTY POSITION:** Circle One PIC SIC
AIRCRAFT:	**BASE MONTH:**
TRAINING RECEIVED: Circle One Initial — **FAR**: 135.331, .345 Transition — 135.135 Upgrade — 135.347 Recurrent — 135.351 Re-qualification Instructor Check Airman	**ELIGIBILITY:** Conducted During: Circle One Pre Month: Due Month: Post Month:

CURRICULUM SEGMENTS	INSTRUCTOR	DATE
Basic Indoctrination		
General Emergency: Situation and Drill [ ] 12 mo. Hands-on Drill [ ] 24 mo.		
Aircraft Ground		
Special		
Flight		
Hazardous Materials		
Qualification		
Instructor/Check Airman Ground		
Instructor/Check Airman Flight		

USE REVERSE SIDE FOR COMMENTS.

I certify the above Record of Training is correct and the training entered was completed satisfactorily.

_____ _____ _____

Date Signature Title

6.6. IOE/LINE CHECK

(TR-2)

Pilot Name:			PIC [ ] SIC [ ]		Date:	
Route Segment:			A/C Type:		N:	
#T/O:	#Lndg:	Check Airman:			Time:	

Item Checked/Results	S	U	Item Checked/Results	S	U
Status/Poss. of Pilot Cert. & Manuals			Knowledge of Airways/Route Manual		
Flight Planning			Flight Control Procedures		
Aircraft Preflight			Traffic Scan Procedures		
Use of Checklists			Use of Avionics & Flight Director		
Crew Coordination			Approach Procedures		
Taxiing			Landings		
Radio Procedures			Post-Flight		
Takeoffs			Forms & Reports		
Climb/Climbing Turns			Manual/Flight Kit		
Airspeed, Heading, Altitude Control			Knowledge of Equipment		
ATC Procedures			Judgment		
Type Training/Check:			IOE Line Check		

Remarks/Comments:				
Results: SAT		UNSAT		Check Airman Signature:

6.7. SINGLE-LINE RECORD ENTRY FORM

(TR-3)
Ground Training Record

NAME: _____

Training/Check	Date	Results	Instructor/Check Airman
FARS/AIM			
WEATHER/WINDSHEAR			
OPS. MANUAL			
HAZ MAT			
CRM			
A/C GROUND			
GENERAL EMERGENCY PROCEDURES			
WAKE TURB.			
DIFFERENCES TRAINING			
HU 500 RECURRENY			
SK61 INITIAL/RECURRENT			
COMPUTER TRAINING			
OPS. MAN. TEST			

6.8. INSTRUCTOR/CHECK AIRMAN

QUALIFICATION RECORD
(TR-4)

This certifies that _____ has satisfactorily completed the training required for qualification as an instructor/check airman and is authorized to conduct pilot flight training/flight checks as indicated below:

Qualified as Instructor: Ground [ ] Flight [ ]

Aircraft:	Instructor:	Date:
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Qualified as Check Airman: Type Checks:
.293 [ ] .297 [ ] .299 [ ] .244 [ ]

Aircraft:	Instructor:	Date:
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

6.9. CREDIT FOR PREVIOUS TRAINING RECORD

(TR-5)

NAME: _____ POSITION: PIC [ ]

AIRCRAFT: _____ SIC [ ]

APPLICABLE CURRICULUM SEGMENTS	Hours	Date
General Emergency ➢ Situation Modules ONLY	_____	_____
Aircraft Ground - Systems Modules ONLY	_____	_____
Aircraft Flight - (Type) _____	_____	_____

I certify the above record of training credit is correct. Required supporting documentation is attached.

REMARKS:_____
_____
_____

6.10. FLIGHT TRAINING RECORD

NAME:	A/C TYPES: /	POSITION: PIC SIC	DATE COMPLETED:
TOTAL HOURS:	(circle one) FAR 135.293 FAR 135.299 FAR 135.297 FAR133		
CHECK AIRMAN/ FAA :		RESULTS: SAT UNSAT	

BLOCK	HOURS	DATE	INSTRUCTOR
1			
2			
3			
4			
5			
6			
7			
8			

MODULES	1	2	3	4	5	6	7	8
Preflight Procedures								
Cockpit Procedures								
Ground and/or Air Taxi								
Hovering Maneuvers								
Takeoffs: Normal								
Crosswind								
High Altitude								
Sim.Eng. Failure								
Rapid Deceleration								
Confined Area/Pinnacle								
En Route: Unusual Attitudes								
Settle w/Power								
Landings: Normal								
Crosswind								
High Altitude								
One Engine Inop.								
Confined Area								
Slopes								
Hovering Autos								
180 Autos								
Straight-In Autos								
Emergency Procedures								
Tail Rotor Failures								
Satisfactory S				Unsatisfactory U				

SEECTION 7

TABLE OF CONTENTS

7.1. AIRCRAFT GROUND PIC/SIC SIKORSKY S-61

OBJECTIVE: To familiarize any crewmember with the aircraft systems, avionics, power plant, and flight characteristics.

INSTRUCTIONAL DELIVERY METHODS: Lecture, Discussion or Computer Training Systems

TRAINING AIDS: Operations Manual/Appropriate Aircraft Flight Manual, Pictorials, Charts

COURSEWARE: Aircraft Flight Manual, Charts, Graphs

TRAINING HOURS: Refer to Section C.

TESTING/CHECKING: Oral Quiz/Hands-On Quiz/Computer Test

GENERAL OPERATIONAL SUBJECTS

FLIGHT CONTROL/LOCATING PROCEDURES
- (1) Company Procedures

WEIGHT & BALANCE
- (1) Company Procedures
- (2) Company Forms

ADVERSE WEATHER PRACTICES
- (1) Turbulence
- (2) Thunderstorms with associated wind-shear and microburst phenomena
- (3) Low visibility
- (4) Contaminated environmental areas
- (5) Wake turbulence avoidance
- (6) All weather surface operations

COMMUNICATION & NAVIGATION EQUIPMENT
- (1) Company communication requirements
- (2) ATC clearance requirements
- (3) Area departure and arrival requirements
- (4) En-route requirements
- (5) Approach and landing requirements

PERFORMANCE CHARACTERISTICS DURING ALL FLIGHT REGIMES
- (1) The use of charts, tables, tabulated data and other related manual information including the Aircraft Flight Manual
- (2) Normal, abnormal, and emergency performance problems including fuel consumption and cruise control

(3) Meteorological and weight-limiting performance factors (temperature, pressure, contaminated runways, precipitation, climb/runway limits)
(4) Inoperative equipment performance limiting factor
(5) Special operational conditions (unpaved runways, high altitude airports, and drift down requirements)

GROUND OPERATIONS

(1) Ramp operations
(2) Rotors in motion
(3) Fueling procedures
(4) Rapid refueling procedures

AIRCRAFT SYSTEMS

A. AIRCRAFT GENERAL

(1) Dimensions
(2) Turning radius
(3) Panel layouts
(4) Cockpit and cabin configurations
(5) Other major systems and components or appliances

B. POWERPLANTS

(1) Basic engine description
(2) Engine thrust rating
(3) Accessory drives
(4) Ignition
(5) Oil system
(6) Fuel control
(7) Bleed air (if applicable)

C. POWERTRAIN & DYNAMIC COMPONENTS

(1) Rotor blades
  a. Main rotor blades
  b. Head
  c. Tail rotor
(2) Transmissions and gearboxes
  a. Main transmission
  b. Combining gearboxes
  c. Intermediate gearboxes
  d. Tail rotor gearboxes
(3) Driveshafts
  a. Engine driveshafts
  b. Tail rotor driveshafts
  c. Clutches
  d. Rotor-brakes

D. ELECTRICAL
- (1) Generators
- (2) External power
- (3) Electrical system schematic
  - a. Buses
  - b. Circuit breakers
  - c. Fuses
- (4) Battery

E. FUEL
- (1) Fuel tanks
- (2) Pumps (engine-driven and boost pumps)
- (3) Valves
- (4) Fuel system schematic
- (5) Cross-feeds
- (6) Quantity indicators
- (7) Fuel jettison (if applicable)

F. FLIGHT CONTROLS
- (1) Primary controls (yaw, pitch & roll devices)
- (2) Secondary controls (leading/trailing edge devices, flaps, trim, and damping mechanisms)
- (3) Means of actuation (direct/indirect or fly-by-wire)
- (4) Auto-pilot/AFCS

G. LANDING GEAR
- (1) Landing gear system schematic
- (2) Extension and retraction mechanism
- (3) Operating sequence of struts, doors, and locking devices
- (4) Nose wheel/Tail wheel steering (if applicable)
- (5) Air/ground sensor relays
- (6) Visual down-lock indicators

H. EQUIPMENT & FURNISHINGS
- (1) Exits
- (2) Cargo areas
- (3) Crewmember and passenger seats
- (4) Bulkheads
- (5) Seating and/or cargo configurations
- (6) Non-emergency equipment and furnishings

I. NAVIGATION EQUIPMENT
- (1) Navigation receivers
- (2) Functional displays (GPS)
- (3) Fault indications
- (4) Weather radar
- (5) Transponder

J. FLIGHT INSTRUMENTS
- (1) Overview of panel arrangement
- (2) Sources of power (electrical, pneumatic, pitot-static, and alternate sources)

(3) Attitude indicator
(4) Heading indicator
(5) Airspeed indicator
(6) Vertical speed indicator
(7) Altimeter
(8) Other relevant instruments

K. COMMUNICATIONS EQUIPMENT
(1) VHF/HF radios
(2) Audio panels
(3) Interphone or passenger address systems (if applicable)

L. WARNING SYSTEMS
(1) Aural, visual, and tactile warning systems
a. Character and degree of urgency related to signal
(2) Warning and caution annunciator systems

M. LIGHTING
(1) Cockpit
(2) Cabin
(3) External
(4) Power sources
(5) Switches
(6) Spare bulbs

N. EMERGENCY EQUIPMENT
(1) Type (first aid kits, life preservers, crash axes, and emergency exits and lights)
(2) Location of each
(3) Purpose of each

AIRCRAFT SYSTEMS INTEGRATION

A. USE OF CHECKLIST
(1) Safety checks
(2) Cockpit preparation
(3) Checklist call-outs and responses
(4) Checklist sequence
(5) Crew coordination

B. MINIMUM EQUIPMENT LIST (MEL)
(1) FAR 135.179
(2) Company Use Policy
a. Pilot responsibilities
b. Planning and compliance with (O) and (M) limitations
c. Maintenance record entries
(3) Maintenance authorized for pilots to perform
a. Determining proper pilot action
b. Pulling and securing circuit breakers

C. FLIGHT PLANNING
- (1) Performance limitations
  - a. Meteorological
  - b. Weight
- (2) Required fuel loads
- (3) Weather planning

D. NAVIGATIONAL SYSTEMS
- (1) Preflight preparation
- (2) Operation
- (3) Flight planning requirements

E. COCKPIT FAMILIARIZATION
- (1) Activation of aircraft systems controls and switches
  - a. Normal
  - b. Abnormal
  - c. Emergency
- (2) Annunciators
  - a. Lights
  - b. Other caution and warning systems

7.2. AIRCRAFT GROUND PIC (OTHER MULTI-ENGINE HELICOPTERS)

OBJECTIVE: To familiarize any crewmember with the aircraft systems, avionics, power plant and flight characteristics.

INSTRUCTIONAL DELIVERY METHODS: Lecture, Discussion, or Computer Training Systems

TRAINING AIDS: Operations Manual/Appropriate Aircraft Flight Manual

COURSEWARE: Aircraft Flight Manual, Charts, Graphs

TRAINING HOURS: Refer to Section 3

TESTING/CHECKING: Oral Quiz/Hands-On Quiz/Computer Test

I. GENERAL OPERATIONAL SUBJECTS

A. FLIGHT CONTROL/LOCATING PROCEDURES

(1) Company procedures

B. WEIGHT & BALANCE

(1) Company procedures

(2) Company forms

C. ADVERSE WEATHER PRACTICES

(1) Turbulence

(2) Thunderstorms with associated wind-shear and microburst phenomena

(3) Low visibility

(4) Contaminated environmental areas

(5) Wake turbulence avoidance

(6) All weather surface operations

D. COMMUNICATION AND NAVIGATION EQUIPMENT

(1) Company communication requirements

(2) ATC clearance requirements

(3) Area departure and arrival requirements

(4) En route requirements

(5) Approach and landing requirements

E. PERFORMANCE CHARACTERISTICS DURING ALL FLIGHT REGIMES

(1) The use of charts, tables, tabulated data and other related manual information including the Aircraft Flight Manual

(2) Normal, abnormal, and emergency performance problems including fuel consumption and cruise control

(3) Meteorological and weight-limiting performance factors (temperature, pressure, contaminated runways, precipitation, climb/runway limits)

(4) Inoperative equipment performance limiting factor

(5) Special operational conditions (unpaved runways, high altitude airports and drift down requirements)

F. GROUND OPERATIONS
- (1) Ramp operations
- (2) Rotors in motion
- (3) Fueling procedures
- (4) Rapid refueling procedures

II. AIRCRAFT SYSTEMS

A. AIRCRAFT GENERAL
- (1) Dimensions
- (2) Turning radius
- (3) Panel layouts
- (4) Cockpit and cabin configurations
- (5) Other major systems and components or appliances

B. POWERPLANTS
- (1) Basic engine description
- (2) Engine thrust rating
- (3) Accessory drives
- (4) Ignition
- (5) Oil System
- (6) Fuel control
- (7) Bleed air (if applicable)

C. POWERTRAIN & DYNAMIC COMPONENTS
- (1) Rotor blades
  - a. Main rotor blades
  - b. Head
  - c. Tail rotor blades
- (2) Transmissions and gearboxes
  - a. Main transmission
  - b. Combining gearboxes
  - c. Intermediate gearboxes
  - d. Tail rotor gearboxes
- (3) Driveshafts
  - a. Engine driveshafts
  - b. Tail rotor driveshafts
  - c. Clutches
  - d. Rotor brakes

D. ELECTRICAL
- (1) Generators
- (2) External power
- (3) Electrical system schematic
  - a. Buses
  - b. Circuit breakers
  - c. Fuses
- (4) Battery

E. FUEL
- (1) Fuel tanks
- (2) Pumps (engine-driven and boost pumps)
- (3) Valves
- (4) Fuel system schematic
- (5) Cross-feeds
- (6) Quantity indicators

F. FLIGHT CONTROLS
- (1) Primary controls (yaw, pitch, & roll devices)
- (2) Secondary controls (leading/trailing edge devices, flaps, trim, and damping mechanisms)
- (3) Means of actuation (direct/indirect or fly-by-wire)
- (4) Auto-pilot/AFCS

G. LANDING GEAR
- (1) Landing gear system schematic

H. EQUIPMENT AND FURNISHINGS
- (1) Exits
- (2) Cargo areas
- (3) Crewmember and passenger seats
- (4) Bulkheads
- (5) Seating and/or cargo configurations
- (6) Non-emergency equipment and furnishings

I. NAVIGATION EQUIPMENT
- (1) Navigation receivers
- (2) Functional displays (GPS)
- (3) Fault indications
- (4) Transponder

J. FLIGHT INSTRUMENTS
- (1) Overview of panel arrangement
- (2) Sources of power (electrical, pneumatic, pitot-static, and alternate sources)
- (3) Attitude indicator
- (4) Heading indicator
- (5) Airspeed indicator
- (6) Vertical speed indicator
- (7) Altimeter
- (8) Other relevant instruments

K. COMMUNICATIONS EQUIPMENT
- (1) VHF/HF radios
- (2) Audio panels

L. WARNING SYSTEMS
- (1) Aural, visual, and tactile warning systems
  - a. Character and degree of urgency related to signal
- (2) Warning and caution annunciator systems

M. LIGHTING
- (1) Cockpit
- (2) Cabin
- (3) External
- (4) Power sources
- (5) Switches
- (6) Spare bulbs

N. EMERGENCY EQUIPMENT
- (1) Type (first aid kits, life preservers, and emergency exits and lights)
- (2) Location of each
- (3) Purpose of each

III. AIRCRAFT SYSTEMS INTEGRATION

A. USE OF CHECKLIST
- (1) Safety checks
- (2) Cockpit preparation
- (3) Checklist sequence

B. MINIMUM EQUIPMENT LIST (MEL)
- (1) FAR 135.179
- (2) Company Use Policy
  - a. Pilot responsibilities
  - b. Planning and compliance with (O) and (M) limitations
  - c. Maintenance record entries
- (3) Maintenance authorized for pilots to perform
  - a. Determining proper pilot action
  - b. Pulling and securing circuit breakers

C. FLIGHT PLANNING
- (1) Performance limitations
  - a. Meteorological
  - b. Weight
- (2) Required fuel loads
- (3) Weather planning

D. NAVIGATIONAL SYSTEMS
- (1) Pre-flight preparation
- (2) Operations
- (3) Flight planning requirements

E. COCKPIT FAMILIARIZATION
- (1) Activation of aircraft systems controls and switches
  - a. Normal
  - b. Abnormal
  - c. Emergency
- (2) Annunciators
  - a. Lights
  - b. Other caution and warning systems

7.3. GENERAL OPERATIONAL SUBJECTS

Aircraft Ground Training

Subject Module No.1 : Company Flight Control/Locating Procedures

Objective:

To insure that the crewmember understands the company's dispatch procedures.

Equipment/Courseware:

General Operations Manual

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Dispatch, flight release, flight locating systems and procedures and flight plan
B. Individuals with the authority to dispatch aircraft (Operational Control)
C. Weather and NOTAM information
D. Company communications

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

7.4. GENERAL OPERATIONAL SUBJECTS (S-61)

Subject Module No.2 : Weight and Balance

Objective:

To insure that the crewmember understands the company's weight and balance procedures.

Equipment/Courseware:

General Operations Manual
Aircraft Flight Manual

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Company Procedures
B. Company Forms

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

GENERAL OPERATIONAL SUBJECTS (S-61)

Subject Module No.3: Adverse Weather Practices

Objective:

To insure that the crewmember understands how to fly in adverse weather conditions.

Equipment/Courseware:

General Operations Manual
Weather Reference
Aircraft Flight Manual

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Turbulence
B. Thunderstorms associated with wind-shear and microburst phenomena
C. Low visibility
D. Contaminated environmental areas
E. Wake turbulence avoidance
F. All weather surface operations

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

GENERAL OPERATIONAL SUBJECTS (S-61)

Subject Module No.4 : Communication and Navigation Equipment

Objective:

To insure that the crewmember understands the company and ATC communication and navigation requirements.

Equipment/Courseware:

General Operations Manual
Navigation Charts and Publications

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Company communication requirements
B. ATC clearance requirements
C. Area departure and arrival requirements
D. En-route requirements
E. Approach and landing requirements

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

GENERAL OPERATIONAL SUBJECTS (S-61)

Subject Module No.5 : Performance Characteristics During All Flight Regimes

Objective:

To insure that the crewmember understands the performance of the aircraft during all flight regimes.

Equipment/Courseware:

Aircraft Flight Manual
Aircraft Performance Charts

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. The use of charts, tables, tabulated data and other related manual information including the Aircraft Flight Manual
B. Normal, abnormal, and emergency performance problems including fuel consumption and cruise control
C. Meteorological and weight-limiting performance factors (temperature, pressure, contaminated runways, precipitation, climb/runway limits)
D. Inoperative equipment performance limiting factor
E. Special operational conditions (unpaved runways, high altitude airports, and drift down requirements)

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

GENERAL OPERATIONAL SUBJECTS (S-61)

Subject Module No.6 : Ground Operations

Objective:

To insure that the crewmember understands company ground operations.

Equipment/Courseware:

General Operations Manual

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Ramp operations
B. Rotors in motion
C. Fueling procedures
D. Rapid refueling procedures

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

7.5. AIRCRAFT SYSTEMS (S-61)

Subject Module No.7 : Aircraft General Description

Objective:

To familiarize the crewmember on the general layout and construction of the aircraft.

Equipment/Courseware:

Aircraft
Flight Manual

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Dimensions
B. Turning radius
C. Panel layouts
D. Cockpit and Cabin configurations
E. Other major systems and components or appliances

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

AIRCRAFT SYSTEMS (S-61)

Subject Module No.8 : Powerplants

Objective:

To familiarize the crewmember on the aircraft powerplant.

Equipment/Courseware:

Aircraft
Flight Manual

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Basic engine description
B. Engine thrust rating
C. Accessory drives
D. Ignition
E. Oil system
F. Fuel control
G. Bleed air

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

AIRCRAFT SYSTEMS (S-61)

Subject Module No.9 : Powertrain and Dynamic Components

Objective:

To familiarize the crewmember on the powertrain and dynamic components of the aircraft.

Equipment/Courseware:

Aircraft
Flight Manual
Diagrams/Charts

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Rotor Blades
   (1) Main rotor blades
   (2) Head
   (3) Tail rotor
B. Transmission and Gearboxes
   (1) Main transmission
   (2) Combining gearboxes
   (3) Intermediate gearboxes
   (4) Tail rotor gearboxes
C. Driveshafts
   (1) Engine driveshafts
   (2) Tail rotor driveshafts
   (3) Clutches
   (4) Rotor brakes

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

AIRCRAFT SYSTEMS (S-61)

Subject Module No. 10 : Aircraft Electrical System

Objective:

To familiarize the crewmember with the aircraft electrical system.

Equipment/Courseware:

Aircraft
Flight Manual
Diagrams

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Generators
B. External Power
C. Electrical system schematic
    (1) Buses
    (2) Circuit breakers
    (3) Fuses
D. Battery

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

AIRCRAFT SYSTEMS (S-61)

Subject Module No.11 : Aircraft Fuel System

Objective:

To familiarize the crewmember with the aircraft fuel system.

Equipment/Courseware:

Aircraft
Flight Manual
Diagrams

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Fuel Tanks
B. Pumps (Engine-driven and boost pumps)
C. Valves
D. Fuel system schematic
E. Crossfeeds
F. Quantity indicators
G. Fuel Jettison (S-61 only)

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

AIRCRAFT SYSTEMS (S-61)

Subject Module No.12: Aircraft Flight Control System

Objective:

To familiarize the crewmember with the aircraft flight control system.

Equipment/Courseware:

Aircraft
Flight Manual
Diagrams

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Primary flight controls (yaw, pitch & roll devices)
B. Secondary controls
C. Means of actuation (direct/indirect or fly be wire)
D. Autopilot/AFCS

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

AIRCRAFT SYSTEMS (S-61)

Subject Module No.13 : Aircraft Landing Gear

Objective:

To familiarize the crewmember with the aircraft landing gear system

Equipment/Courseware:

Aircraft
Flight Manual
Diagrams

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Landing gear system schematic
B. Extension and retraction mechanism (S-61 only)
C. Operating sequence of struts, doors and locking devices (S-61 only)
D. Air/ground sensor relays (S-61 only)
E. Nose wheel/Tail wheel steering (S-61 only)
F. Visual down-lock indicators (S-61 only)

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

AIRCRAFT SYSTEMS (S-61)

Subject Module No.14 : Aircraft Equipment and Furnishing

Objective:

To familiarize the crewmember with the aircraft equipment and furnishings.

Equipment/Courseware:

Aircraft
Flight Manual
Diagrams

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Exits
B. Cargo areas
C. Crewmember and passenger seats
D. Bulkheads
E. Seating and/or cargo configurations
F. Non Emergency equipment and furnishings

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

AIRCRAFT SYSTEMS (S-61)

Subject Module No.15 : Aircraft Navigation Equipment

Objective:

To familiarize the crewmember with the aircraft navigation equipment.

Equipment/Courseware:

Aircraft
Flight Manual
Diagrams

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Navigation receivers
B. Functional displays (GPS)
C. Fault indications
D. Weather radar (S-61 only)
E. Transponder

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

AIRCRAFT SYSTEMS (S-61)

Subject Module No.16 : Aircraft Flight Instruments

Objective:

To familiarize the crewmember with the aircraft flight instruments.

Equipment/Courseware:

Aircraft
Flight Manual
Diagrams

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Overview of panel arrangement
B. Sources of power (electrical, pneumatic, pitot-static, and alternate sources)
C. Attitude indicator
D. Heading indicator
E. Airspeed indicator
F. Vertical speed indicator
G. Altimeter
H. Other relevant instruments

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

AIRCRAFT SYSTEMS (S-61)

Subject Module No. 17 : Aircraft Communication Equipment

Objective:

To familiarize the crewmember with the aircraft communication equipment.

Equipment/Courseware:

Aircraft
Flight Manual
Diagrams

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. VHF/HF radios
B. Audio panels
C. Interphone or passenger address system (S-61 only)

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

AIRCRAFT SYSTEMS (S-61)

Subject Module No.18 : Aircraft Warning Systems

Objective:

To familiarize the crewmember with the aircraft warning systems.

Equipment/Courseware:

Aircraft
Flight Manual
Diagrams

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Aural, visual, and tactile warning systems
    (1) Character and degree of urgency related to signal
B. Warning and caution annunciator systems

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

AIRCRAFT SYSTEMS (S-61)

Subject Module No.19 : Aircraft Lighting

Objective:

To familiarize the crewmember with the aircraft lighting.

Equipment/Courseware:

Aircraft
Flight Manual
Diagrams

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Cockpit
B. Cabin
C. External
D. Power sources
E. Switches
F. Spare bulbs

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

AIRCRAFT SYSTEMS (S-61)

Subject Module No.20 : Aircraft Emergency Equipment

Objective:

To familiarize the crewmember with the aircraft emergency equipment.

Equipment/Courseware:

Aircraft
Flight Manual
Diagrams

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Type
B. Location of each
C. Purpose of each

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

7.6. AIRCRAFT SYSTEMS INTEGRATION (S-61)

Subject Module No.21 : Use of Checklist

Objective:

To familiarize the crewmember with the use of aircraft checklists.

Equipment/Courseware:

Aircraft
Flight Manual/Checklist
Diagrams

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Safety checks
B. Cockpit preparation
C. Checklist call-outs and responses
D. Checklist sequence
E. Crew coordination
    (1) Flying pilot
    (2) Non-flying pilot
    (3) Flight attendant

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

AIRCRAFT SYSTEMS INTEGRATION (S-61)

Subject Module No.22 : Minimum Equipment List (MEL)

Objective:

To familiarize the crewmember with the use of the aircraft MEL.

Equipment/Courseware:

Appropriate aircraft MEL
Operations Manual

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. FAR 135.179
B. Company Use Policy
    (1) Pilot responsibilities
    (2) Planning and compliance with (O) and (M) limitations
    (3) Maintenance record entries
C. Maintenance authorized for pilots to perform
    (1) Determining proper pilot action
    (2) Pulling and securing circuit breakers

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

AIRCRAFT SYSTEMS INTEGRATION (S-61)

Subject Module No.23 : Flight Planning

Objective:

To familiarize the crewmember with aircraft specific flight planning requirements.

Equipment/Courseware:

Flight Manual/Checklist
Performance charts
Diagrams

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Performance limitations
    (1) Meteorological
    (2) Weight
B. Required fuel loads
C. Weather planning

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

AIRCRAFT SYSTEMS INTEGRATION (S-61)

Subject Module No.24 : Navigational Systems

Objective:

To familiarize the crewmember with the use of aircraft navigation systems.

Equipment/Courseware:

Aircraft
Flight Manual/Checklist
Diagrams

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Preflight operation
B. Operation
C. Flight planning requirements

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

AIRCRAFT SYSTEMS INTEGRATION (S-61)

Subject Module No.25 : Cockpit Familiarization

Objective:

To familiarize the crewmember with the aircraft's cockpit.

Equipment/Courseware:

Aircraft
Flight Manual/Checklist
Diagrams

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Activation of aircraft systems, controls, and switches
   (1) Normal
   (2) Abnormal
   (3) Emergency
B. Annunciators
   (1) Lights
   (2) Other caution and warning systems

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

7.7. FLIGHT TRAINING CURRICULUM SEGMENT

PIC/SIC SIKORSKY S-61
Helicopter (Multiengine)

OBJECTIVE: To fully expose a potential PIC/SIC to all the information/maneuvers that he may be expected to execute.

INSTRUCTIONAL DELIVERY METHODS: Lecture, Discussion, Demonstration, and Performance

TRAINING AIDS: Aircraft, Operator's Manual, Sikorsky Reference, Bell Reference

TRAINING HOURS: Refer to Section 3.

TESTING/CHECKING: Flight Check/Oral Evaluation

A. PREPARATION
- (1) Visual inspection
- (2) Pre-taxi procedures
- (3) Performance limitations

B. SURFACE OPERATION
- (1) Starting
- (2) Lift-to-Hover IGE/OGE (M)
- (3) Hover Turns IGE/OGE
- (4) Sideward/rearward hovering
- (5) Slope operations (M)
  - a. Liftoff
  - b. Landing
  - c. Taxiing

C. TAKEOFF
- (1) Normal (M)
- (2) Obstacle clearance (M)
- (3) Running (high altitude) (M)
- (4) Category "A" (S-61 only) (M)
- (5) Category "A" w/Powerplant fail *before* CDP (S-61 only) (M)
- (6) Category "A" w/Powerplant fail *after* CDP (S-61 only) (M)
- (7) Rejected takeoff (M)

D. CLIMB
- (1) Normal
- (2) Best rate
- (3) Best angle

E. EN ROUTE
- (1) Medium-banked turns
- (2) Powerplant restart and shutdown
- (3) Low speed characteristics
- (4) High speed characteristics

F. DESCENT
- (1) Normal
- (2) Maximum rate
- (3) Autorotative glide

G. APPROACHES
- (1) VFR procedures (M)
  - a. Normal
  - b. Obstacle clearance
  - c. High altitude
  - d. Elevated landing site
  - e. With degraded control augmentation
  - f. Balked landing (M)
  - g. Shallow approach, running landing

H. LANDINGS
- (1) Normal
- (2) Category "A" (S-61 only)
- (3) Category "A" w/Powerplant fail *after* LDP (S-61 only)
- (4) Crosswind
- (5) With degraded control augmentation

I. AFTER LANDING
- (1) Taxiing
- (2) Parking #
- (3) Stopping the rotors
- (4) Emergency evacuation/egress

J. UNPREPARED SITE OPERATIONS
- (1) Confined areas (PIC only)
- (2) Pinnacles (PIC only)
- (3) Ridgelines (PIC only)

K. OTHER FLIGHT PROCEDURES DURING ANY AIRBORNE PHASE
- (1) Air hazard avoidance #
- (2) Wind-shear/microburst

L. SYSTEMS PROCEDURES DURING ANY AIRBORNE PHASE (NORMAL, ABNORMAL, ALTERNATE)
- (1) Fuel and oil
- (2) Electrical
- (3) Flight controls
- (4) Loss of anti-torque effectiveness (M)
- (5) Communications equipment
- (6) Navigation equipment

M. SYSTEMS PROCEDURES TRAINING DURING ANY AIRBORNE PHASE (EMERGENCY)
- (1) Aircraft fires

(2) Smoke control
(3) Powerplant malfunctions
(4) Electrical, hydraulic, pneumatic systems
(5) Flight control systems malfunction
(6) Anti-torque failure (M)
(7) Settling with power

SEECTION 7

TABLE OF CONTENTS

7.1. AIRCRAFT GROUND PIC/SIC SIKORSKY S-61

OBJECTIVE: To familiarize any crewmember with the aircraft systems, avionics, power plant, and flight characteristics.

INSTRUCTIONAL DELIVERY METHODS: Lecture, Discussion or Computer Training Systems

TRAINING AIDS: Operations Manual/Appropriate Aircraft Flight Manual, Pictorials, Charts

COURSEWARE: Aircraft Flight Manual, Charts, Graphs

TRAINING HOURS: Refer to Section C.

TESTING/CHECKING: Oral Quiz/Hands-On Quiz/Computer Test

GENERAL OPERATIONAL SUBJECTS

FLIGHT CONTROL/LOCATING PROCEDURES
- (1) Company Procedures

WEIGHT & BALANCE
- (1) Company Procedures
- (2) Company Forms

ADVERSE WEATHER PRACTICES
- (1) Turbulence
- (2) Thunderstorms with associated wind-shear and microburst phenomena
- (3) Low visibility
- (4) Contaminated environmental areas
- (5) Wake turbulence avoidance
- (6) All weather surface operations

COMMUNICATION & NAVIGATION EQUIPMENT
- (1) Company communication requirements
- (2) ATC clearance requirements
- (3) Area departure and arrival requirements
- (4) En-route requirements
- (5) Approach and landing requirements

PERFORMANCE CHARACTERISTICS DURING ALL FLIGHT REGIMES
- (1) The use of charts, tables, tabulated data and other related manual information including the Aircraft Flight Manual
- (2) Normal, abnormal, and emergency performance problems including fuel consumption and cruise control

(3) Meteorological and weight-limiting performance factors (temperature, pressure, contaminated runways, precipitation, climb/runway limits)
(4) Inoperative equipment performance limiting factor
(5) Special operational conditions (unpaved runways, high altitude airports, and drift down requirements)

GROUND OPERATIONS

(1) Ramp operations
(2) Rotors in motion
(3) Fueling procedures
(4) Rapid refueling procedures

AIRCRAFT SYSTEMS

A. AIRCRAFT GENERAL

(1) Dimensions
(2) Turning radius
(3) Panel layouts
(4) Cockpit and cabin configurations
(5) Other major systems and components or appliances

B. POWERPLANTS

(1) Basic engine description
(2) Engine thrust rating
(3) Accessory drives
(4) Ignition
(5) Oil system
(6) Fuel control
(7) Bleed air (if applicable)

C. POWERTRAIN & DYNAMIC COMPONENTS

(1) Rotor blades
  a. Main rotor blades
  b. Head
  c. Tail rotor
(2) Transmissions and gearboxes
  a. Main transmission
  b. Combining gearboxes
  c. Intermediate gearboxes
  d. Tail rotor gearboxes
(3) Driveshafts
  a. Engine driveshafts
  b. Tail rotor driveshafts
  c. Clutches
  d. Rotor-brakes

D. ELECTRICAL
- (1) Generators
- (2) External power
- (3) Electrical system schematic
  - a. Buses
  - b. Circuit breakers
  - c. Fuses
- (4) Battery

E. FUEL
- (1) Fuel tanks
- (2) Pumps (engine-driven and boost pumps)
- (3) Valves
- (4) Fuel system schematic
- (5) Cross-feeds
- (6) Quantity indicators
- (7) Fuel jettison (if applicable)

F. FLIGHT CONTROLS
- (1) Primary controls (yaw, pitch & roll devices)
- (2) Secondary controls (leading/trailing edge devices, flaps, trim, and damping mechanisms)
- (3) Means of actuation (direct/indirect or fly-by-wire)
- (4) Auto-pilot/AFCS

G. LANDING GEAR
- (1) Landing gear system schematic
- (2) Extension and retraction mechanism
- (3) Operating sequence of struts, doors, and locking devices
- (4) Nose wheel/Tail wheel steering (if applicable)
- (5) Air/ground sensor relays
- (6) Visual down-lock indicators

H. EQUIPMENT & FURNISHINGS
- (1) Exits
- (2) Cargo areas
- (3) Crewmember and passenger seats
- (4) Bulkheads
- (5) Seating and/or cargo configurations
- (6) Non-emergency equipment and furnishings

I. NAVIGATION EQUIPMENT
- (1) Navigation receivers
- (2) Functional displays (GPS)
- (3) Fault indications
- (4) Weather radar
- (5) Transponder

J. FLIGHT INSTRUMENTS
- (1) Overview of panel arrangement
- (2) Sources of power (electrical, pneumatic, pitot-static, and alternate sources)

(3) Attitude indicator
(4) Heading indicator
(5) Airspeed indicator
(6) Vertical speed indicator
(7) Altimeter
(8) Other relevant instruments

K. COMMUNICATIONS EQUIPMENT
(1) VHF/HF radios
(2) Audio panels
(3) Interphone or passenger address systems (if applicable)

L. WARNING SYSTEMS
(1) Aural, visual, and tactile warning systems
a. Character and degree of urgency related to signal
(2) Warning and caution annunciator systems

M. LIGHTING
(1) Cockpit
(2) Cabin
(3) External
(4) Power sources
(5) Switches
(6) Spare bulbs

N. EMERGENCY EQUIPMENT
(1) Type (first aid kits, life preservers, crash axes, and emergency exits and lights)
(2) Location of each
(3) Purpose of each

AIRCRAFT SYSTEMS INTEGRATION

A. USE OF CHECKLIST
(1) Safety checks
(2) Cockpit preparation
(3) Checklist call-outs and responses
(4) Checklist sequence
(5) Crew coordination

B. MINIMUM EQUIPMENT LIST (MEL)
(1) FAR 135.179
(2) Company Use Policy
a. Pilot responsibilities
b. Planning and compliance with (O) and (M) limitations
c. Maintenance record entries
(3) Maintenance authorized for pilots to perform
a. Determining proper pilot action
b. Pulling and securing circuit breakers

C. FLIGHT PLANNING
- (1) Performance limitations
  - a. Meteorological
  - b. Weight
- (2) Required fuel loads
- (3) Weather planning

D. NAVIGATIONAL SYSTEMS
- (1) Preflight preparation
- (2) Operation
- (3) Flight planning requirements

E. COCKPIT FAMILIARIZATION
- (1) Activation of aircraft systems controls and switches
  - a. Normal
  - b. Abnormal
  - c. Emergency
- (2) Annunciators
  - a. Lights
  - b. Other caution and warning systems

7.2. AIRCRAFT GROUND PIC (OTHER MULTI-ENGINE HELICOPTERS)

OBJECTIVE: To familiarize any crewmember with the aircraft systems, avionics, power plant and flight characteristics.

INSTRUCTIONAL DELIVERY METHODS: Lecture, Discussion, or Computer Training Systems

TRAINING AIDS: Operations Manual/Appropriate Aircraft Flight Manual

COURSEWARE: Aircraft Flight Manual, Charts, Graphs

TRAINING HOURS: Refer to Section 3

TESTING/CHECKING: Oral Quiz/Hands-On Quiz/Computer Test

I. GENERAL OPERATIONAL SUBJECTS

A. FLIGHT CONTROL/LOCATING PROCEDURES

(1) Company procedures

B. WEIGHT & BALANCE

(1) Company procedures

(2) Company forms

C. ADVERSE WEATHER PRACTICES

(1) Turbulence

(2) Thunderstorms with associated wind-shear and microburst phenomena

(3) Low visibility

(4) Contaminated environmental areas

(5) Wake turbulence avoidance

(6) All weather surface operations

D. COMMUNICATION AND NAVIGATION EQUIPMENT

(1) Company communication requirements

(2) ATC clearance requirements

(3) Area departure and arrival requirements

(4) En route requirements

(5) Approach and landing requirements

E. PERFORMANCE CHARACTERISTICS DURING ALL FLIGHT REGIMES

(1) The use of charts, tables, tabulated data and other related manual information including the Aircraft Flight Manual

(2) Normal, abnormal, and emergency performance problems including fuel consumption and cruise control

(3) Meteorological and weight-limiting performance factors (temperature, pressure, contaminated runways, precipitation, climb/runway limits)

(4) Inoperative equipment performance limiting factor

(5) Special operational conditions (unpaved runways, high altitude airports and drift down requirements)

F. GROUND OPERATIONS
- (1) Ramp operations
- (2) Rotors in motion
- (3) Fueling procedures
- (4) Rapid refueling procedures

II. AIRCRAFT SYSTEMS

A. AIRCRAFT GENERAL
- (1) Dimensions
- (2) Turning radius
- (3) Panel layouts
- (4) Cockpit and cabin configurations
- (5) Other major systems and components or appliances

B. POWERPLANTS
- (1) Basic engine description
- (2) Engine thrust rating
- (3) Accessory drives
- (4) Ignition
- (5) Oil System
- (6) Fuel control
- (7) Bleed air (if applicable)

C. POWERTRAIN & DYNAMIC COMPONENTS
- (1) Rotor blades
  - a. Main rotor blades
  - b. Head
  - c. Tail rotor blades
- (2) Transmissions and gearboxes
  - a. Main transmission
  - b. Combining gearboxes
  - c. Intermediate gearboxes
  - d. Tail rotor gearboxes
- (3) Driveshafts
  - a. Engine driveshafts
  - b. Tail rotor driveshafts
  - c. Clutches
  - d. Rotor brakes

D. ELECTRICAL
- (1) Generators
- (2) External power
- (3) Electrical system schematic
  - a. Buses
  - b. Circuit breakers
  - c. Fuses
- (4) Battery

E. FUEL
- (1) Fuel tanks
- (2) Pumps (engine-driven and boost pumps)
- (3) Valves
- (4) Fuel system schematic
- (5) Cross-feeds
- (6) Quantity indicators

F. FLIGHT CONTROLS
- (1) Primary controls (yaw, pitch, & roll devices)
- (2) Secondary controls (leading/trailing edge devices, flaps, trim, and damping mechanisms)
- (3) Means of actuation (direct/indirect or fly-by-wire)
- (4) Auto-pilot/AFCS

G. LANDING GEAR
- (1) Landing gear system schematic

H. EQUIPMENT AND FURNISHINGS
- (1) Exits
- (2) Cargo areas
- (3) Crewmember and passenger seats
- (4) Bulkheads
- (5) Seating and/or cargo configurations
- (6) Non-emergency equipment and furnishings

I. NAVIGATION EQUIPMENT
- (1) Navigation receivers
- (2) Functional displays (GPS)
- (3) Fault indications
- (4) Transponder

J. FLIGHT INSTRUMENTS
- (1) Overview of panel arrangement
- (2) Sources of power (electrical, pneumatic, pitot-static, and alternate sources)
- (3) Attitude indicator
- (4) Heading indicator
- (5) Airspeed indicator
- (6) Vertical speed indicator
- (7) Altimeter
- (8) Other relevant instruments

K. COMMUNICATIONS EQUIPMENT
- (1) VHF/HF radios
- (2) Audio panels

L. WARNING SYSTEMS
- (1) Aural, visual, and tactile warning systems
  - a. Character and degree of urgency related to signal
- (2) Warning and caution annunciator systems

M. LIGHTING
- (1) Cockpit
- (2) Cabin
- (3) External
- (4) Power sources
- (5) Switches
- (6) Spare bulbs

N. EMERGENCY EQUIPMENT
- (1) Type (first aid kits, life preservers, and emergency exits and lights)
- (2) Location of each
- (3) Purpose of each

III. AIRCRAFT SYSTEMS INTEGRATION

A. USE OF CHECKLIST
- (1) Safety checks
- (2) Cockpit preparation
- (3) Checklist sequence

B. MINIMUM EQUIPMENT LIST (MEL)
- (1) FAR 135.179
- (2) Company Use Policy
  - a. Pilot responsibilities
  - b. Planning and compliance with (O) and (M) limitations
  - c. Maintenance record entries
- (3) Maintenance authorized for pilots to perform
  - a. Determining proper pilot action
  - b. Pulling and securing circuit breakers

C. FLIGHT PLANNING
- (1) Performance limitations
  - a. Meteorological
  - b. Weight
- (2) Required fuel loads
- (3) Weather planning

D. NAVIGATIONAL SYSTEMS
- (1) Pre-flight preparation
- (2) Operations
- (3) Flight planning requirements

E. COCKPIT FAMILIARIZATION
- (1) Activation of aircraft systems controls and switches
  - a. Normal
  - b. Abnormal
  - c. Emergency
- (2) Annunciators
  - a. Lights
  - b. Other caution and warning systems

7.3. GENERAL OPERATIONAL SUBJECTS

Aircraft Ground Training

Subject Module No.1 : Company Flight Control/Locating Procedures

Objective:

To insure that the crewmember understands the company's dispatch procedures.

Equipment/Courseware:

General Operations Manual

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Dispatch, flight release, flight locating systems and procedures and flight plan
B. Individuals with the authority to dispatch aircraft (Operational Control)
C. Weather and NOTAM information
D. Company communications

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

7.4. GENERAL OPERATIONAL SUBJECTS (S-61)

Subject Module No.2 : Weight and Balance

Objective:

To insure that the crewmember understands the company's weight and balance procedures.

Equipment/Courseware:

General Operations Manual
Aircraft Flight Manual

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Company Procedures
B. Company Forms

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

GENERAL OPERATIONAL SUBJECTS (S-61)

Subject Module No.3: Adverse Weather Practices

Objective:

To insure that the crewmember understands how to fly in adverse weather conditions.

Equipment/Courseware:

General Operations Manual
Weather Reference
Aircraft Flight Manual

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Turbulence
B. Thunderstorms associated with wind-shear and microburst phenomena
C. Low visibility
D. Contaminated environmental areas
E. Wake turbulence avoidance
F. All weather surface operations

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

GENERAL OPERATIONAL SUBJECTS (S-61)

Subject Module No.4 : Communication and Navigation Equipment

Objective:

To insure that the crewmember understands the company and ATC communication and navigation requirements.

Equipment/Courseware:

General Operations Manual
Navigation Charts and Publications

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Company communication requirements
B. ATC clearance requirements
C. Area departure and arrival requirements
D. En-route requirements
E. Approach and landing requirements

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

GENERAL OPERATIONAL SUBJECTS (S-61)

Subject Module No.5 : Performance Characteristics During All Flight Regimes

Objective:

To insure that the crewmember understands the performance of the aircraft during all flight regimes.

Equipment/Courseware:

Aircraft Flight Manual
Aircraft Performance Charts

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. The use of charts, tables, tabulated data and other related manual information including the Aircraft Flight Manual
B. Normal, abnormal, and emergency performance problems including fuel consumption and cruise control
C. Meteorological and weight-limiting performance factors (temperature, pressure, contaminated runways, precipitation, climb/runway limits)
D. Inoperative equipment performance limiting factor
E. Special operational conditions (unpaved runways, high altitude airports, and drift down requirements)

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

GENERAL OPERATIONAL SUBJECTS (S-61)

Subject Module No.6 : Ground Operations

Objective:

To insure that the crewmember understands company ground operations.

Equipment/Courseware:

General Operations Manual

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Ramp operations
B. Rotors in motion
C. Fueling procedures
D. Rapid refueling procedures

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

7.5. AIRCRAFT SYSTEMS (S-61)

Subject Module No.7 : Aircraft General Description

Objective:

To familiarize the crewmember on the general layout and construction of the aircraft.

Equipment/Courseware:

Aircraft
Flight Manual

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Dimensions
B. Turning radius
C. Panel layouts
D. Cockpit and Cabin configurations
E. Other major systems and components or appliances

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

AIRCRAFT SYSTEMS (S-61)

Subject Module No.8 : Powerplants

Objective:

To familiarize the crewmember on the aircraft powerplant.

Equipment/Courseware:

Aircraft
Flight Manual

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Basic engine description
B. Engine thrust rating
C. Accessory drives
D. Ignition
E. Oil system
F. Fuel control
G. Bleed air

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

AIRCRAFT SYSTEMS (S-61)

Subject Module No.9 : Powertrain and Dynamic Components

Objective:

To familiarize the crewmember on the powertrain and dynamic components of the aircraft.

Equipment/Courseware:

Aircraft
Flight Manual
Diagrams/Charts

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Rotor Blades
   (1) Main rotor blades
   (2) Head
   (3) Tail rotor
B. Transmission and Gearboxes
   (1) Main transmission
   (2) Combining gearboxes
   (3) Intermediate gearboxes
   (4) Tail rotor gearboxes
C. Driveshafts
   (1) Engine driveshafts
   (2) Tail rotor driveshafts
   (3) Clutches
   (4) Rotor brakes

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

AIRCRAFT SYSTEMS (S-61)

Subject Module No. 10 : Aircraft Electrical System

Objective:

To familiarize the crewmember with the aircraft electrical system.

Equipment/Courseware:

Aircraft
Flight Manual
Diagrams

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Generators
B. External Power
C. Electrical system schematic
    (1) Buses
    (2) Circuit breakers
    (3) Fuses
D. Battery

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

AIRCRAFT SYSTEMS (S-61)

Subject Module No.11 : Aircraft Fuel System

Objective:

To familiarize the crewmember with the aircraft fuel system.

Equipment/Courseware:

Aircraft
Flight Manual
Diagrams

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Fuel Tanks
B. Pumps (Engine-driven and boost pumps)
C. Valves
D. Fuel system schematic
E. Crossfeeds
F. Quantity indicators
G. Fuel Jettison (S-61 only)

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

AIRCRAFT SYSTEMS (S-61)

Subject Module No.12: Aircraft Flight Control System

Objective:

To familiarize the crewmember with the aircraft flight control system.

Equipment/Courseware:

Aircraft
Flight Manual
Diagrams

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Primary flight controls (yaw, pitch & roll devices)
B. Secondary controls
C. Means of actuation (direct/indirect or fly be wire)
D. Autopilot/AFCS

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

AIRCRAFT SYSTEMS (S-61)

Subject Module No.13 : Aircraft Landing Gear

Objective:

To familiarize the crewmember with the aircraft landing gear system

Equipment/Courseware:

Aircraft
Flight Manual
Diagrams

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Landing gear system schematic
B. Extension and retraction mechanism (S-61 only)
C. Operating sequence of struts, doors and locking devices (S-61 only)
D. Air/ground sensor relays (S-61 only)
E. Nose wheel/Tail wheel steering (S-61 only)
F. Visual down-lock indicators (S-61 only)

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

AIRCRAFT SYSTEMS (S-61)

Subject Module No.14 : Aircraft Equipment and Furnishing

Objective:

To familiarize the crewmember with the aircraft equipment and furnishings.

Equipment/Courseware:

Aircraft
Flight Manual
Diagrams

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Exits
B. Cargo areas
C. Crewmember and passenger seats
D. Bulkheads
E. Seating and/or cargo configurations
F. Non Emergency equipment and furnishings

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

AIRCRAFT SYSTEMS (S-61)

Subject Module No.15 : Aircraft Navigation Equipment

Objective:

To familiarize the crewmember with the aircraft navigation equipment.

Equipment/Courseware:

Aircraft
Flight Manual
Diagrams

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Navigation receivers
B. Functional displays (GPS)
C. Fault indications
D. Weather radar (S-61 only)
E. Transponder

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

AIRCRAFT SYSTEMS (S-61)

Subject Module No.16 : Aircraft Flight Instruments

Objective:

To familiarize the crewmember with the aircraft flight instruments.

Equipment/Courseware:

Aircraft
Flight Manual
Diagrams

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Overview of panel arrangement
B. Sources of power (electrical, pneumatic, pitot-static, and alternate sources)
C. Attitude indicator
D. Heading indicator
E. Airspeed indicator
F. Vertical speed indicator
G. Altimeter
H. Other relevant instruments

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

AIRCRAFT SYSTEMS (S-61)

Subject Module No. 17 : Aircraft Communication Equipment

Objective:

To familiarize the crewmember with the aircraft communication equipment.

Equipment/Courseware:

Aircraft
Flight Manual
Diagrams

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. VHF/HF radios
B. Audio panels
C. Interphone or passenger address system (S-61 only)

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

AIRCRAFT SYSTEMS (S-61)

Subject Module No.18 : Aircraft Warning Systems

Objective:

To familiarize the crewmember with the aircraft warning systems.

Equipment/Courseware:

Aircraft
Flight Manual
Diagrams

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Aural, visual, and tactile warning systems
    (1) Character and degree of urgency related to signal
B. Warning and caution annunciator systems

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

AIRCRAFT SYSTEMS (S-61)

Subject Module No.19 : Aircraft Lighting

Objective:

To familiarize the crewmember with the aircraft lighting.

Equipment/Courseware:

Aircraft
Flight Manual
Diagrams

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Cockpit
B. Cabin
C. External
D. Power sources
E. Switches
F. Spare bulbs

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

AIRCRAFT SYSTEMS (S-61)

Subject Module No.20 : Aircraft Emergency Equipment

Objective:

To familiarize the crewmember with the aircraft emergency equipment.

Equipment/Courseware:

Aircraft
Flight Manual
Diagrams

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Type
B. Location of each
C. Purpose of each

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

7.6. AIRCRAFT SYSTEMS INTEGRATION (S-61)

Subject Module No.21 : Use of Checklist

Objective:

To familiarize the crewmember with the use of aircraft checklists.

Equipment/Courseware:

Aircraft
Flight Manual/Checklist
Diagrams

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Safety checks
B. Cockpit preparation
C. Checklist call-outs and responses
D. Checklist sequence
E. Crew coordination
    (1) Flying pilot
    (2) Non-flying pilot
    (3) Flight attendant

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

AIRCRAFT SYSTEMS INTEGRATION (S-61)

Subject Module No.22 : Minimum Equipment List (MEL)

Objective:

To familiarize the crewmember with the use of the aircraft MEL.

Equipment/Courseware:

Appropriate aircraft MEL
Operations Manual

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. FAR 135.179
B. Company Use Policy
    (1) Pilot responsibilities
    (2) Planning and compliance with (O) and (M) limitations
    (3) Maintenance record entries
C. Maintenance authorized for pilots to perform
    (1) Determining proper pilot action
    (2) Pulling and securing circuit breakers

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

AIRCRAFT SYSTEMS INTEGRATION (S-61)

Subject Module No.23 : Flight Planning

Objective:

To familiarize the crewmember with aircraft specific flight planning requirements.

Equipment/Courseware:

Flight Manual/Checklist
Performance charts
Diagrams

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Performance limitations
    (1) Meteorological
    (2) Weight
B. Required fuel loads
C. Weather planning

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

AIRCRAFT SYSTEMS INTEGRATION (S-61)

Subject Module No.24 : Navigational Systems

Objective:

To familiarize the crewmember with the use of aircraft navigation systems.

Equipment/Courseware:

Aircraft
Flight Manual/Checklist
Diagrams

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Preflight operation
B. Operation
C. Flight planning requirements

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

AIRCRAFT SYSTEMS INTEGRATION (S-61)

Subject Module No.25 : Cockpit Familiarization

Objective:

To familiarize the crewmember with the aircraft's cockpit.

Equipment/Courseware:

Aircraft
Flight Manual/Checklist
Diagrams

Instructional Delivery Techniques:

Lecture
Discussion
Computer Training Systems

Subjects:

A. Activation of aircraft systems, controls, and switches
   (1) Normal
   (2) Abnormal
   (3) Emergency
B. Annunciators
   (1) Lights
   (2) Other caution and warning systems

Completion Standards:

The individual shall demonstrate satisfactory knowledge of the subject material.

7.7. FLIGHT TRAINING CURRICULUM SEGMENT

PIC/SIC SIKORSKY S-61
Helicopter (Multiengine)

OBJECTIVE: To fully expose a potential PIC/SIC to all the information/maneuvers that he may be expected to execute.

INSTRUCTIONAL DELIVERY METHODS: Lecture, Discussion, Demonstration, and Performance

TRAINING AIDS: Aircraft, Operator's Manual, Sikorsky Reference, Bell Reference

TRAINING HOURS: Refer to Section 3.

TESTING/CHECKING: Flight Check/Oral Evaluation

A. PREPARATION
- (1) Visual inspection
- (2) Pre-taxi procedures
- (3) Performance limitations

B. SURFACE OPERATION
- (1) Starting
- (2) Lift-to-Hover IGE/OGE (M)
- (3) Hover Turns IGE/OGE
- (4) Sideward/rearward hovering
- (5) Slope operations (M)
  - a. Liftoff
  - b. Landing
  - c. Taxiing

C. TAKEOFF
- (1) Normal (M)
- (2) Obstacle clearance (M)
- (3) Running (high altitude) (M)
- (4) Category "A" (S-61 only) (M)
- (5) Category "A" w/Powerplant fail *before* CDP (S-61 only) (M)
- (6) Category "A" w/Powerplant fail *after* CDP (S-61 only) (M)
- (7) Rejected takeoff (M)

D. CLIMB
- (1) Normal
- (2) Best rate
- (3) Best angle

E. EN ROUTE
- (1) Medium-banked turns
- (2) Powerplant restart and shutdown
- (3) Low speed characteristics
- (4) High speed characteristics

F. DESCENT
- (1) Normal
- (2) Maximum rate
- (3) Autorotative glide

G. APPROACHES
- (1) VFR procedures (M)
  - a. Normal
  - b. Obstacle clearance
  - c. High altitude
  - d. Elevated landing site
  - e. With degraded control augmentation
  - f. Balked landing (M)
  - g. Shallow approach, running landing

H. LANDINGS
- (1) Normal
- (2) Category "A" (S-61 only)
- (3) Category "A" w/Powerplant fail *after* LDP (S-61 only)
- (4) Crosswind
- (5) With degraded control augmentation

I. AFTER LANDING
- (1) Taxiing
- (2) Parking #
- (3) Stopping the rotors
- (4) Emergency evacuation/egress

J. UNPREPARED SITE OPERATIONS
- (1) Confined areas (PIC only)
- (2) Pinnacles (PIC only)
- (3) Ridgelines (PIC only)

K. OTHER FLIGHT PROCEDURES DURING ANY AIRBORNE PHASE
- (1) Air hazard avoidance #
- (2) Wind-shear/microburst

L. SYSTEMS PROCEDURES DURING ANY AIRBORNE PHASE (NORMAL, ABNORMAL, ALTERNATE)
- (1) Fuel and oil
- (2) Electrical
- (3) Flight controls
- (4) Loss of anti-torque effectiveness (M)
- (5) Communications equipment
- (6) Navigation equipment

M. SYSTEMS PROCEDURES TRAINING DURING ANY AIRBORNE PHASE (EMERGENCY)
- (1) Aircraft fires

(2) Smoke control
(3) Powerplant malfunctions
(4) Electrical, hydraulic, pneumatic systems
(5) Flight control systems malfunction
(6) Anti-torque failure (M)
(7) Settling with power

SECTION 8

TABLE OF CONTENTS