SACR 51-13

STRATEGIC AIR COMMAND REGULATION

FLYING TRAINING

U-2/TR-1 AIRCRAFT

22 JUNE 1981

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS STRATEGIC AIR COMMAND

DEPARTMENT OF THE AIR FORCE
Headquarters Strategic Air Command
Offutt Air Force Base NE 68113

SAC REGULATION 51-13

22 June 1981

Flying Training

U-2/TR-1 AIRCRAFT

This regulation establishes requirements for initial qualification, mission qualification, continuation, difference, recurrency, requalification and instructor upgrade training as well as pilot/aircraft limitations for the U-2C, U-2R and TR-1 aircraft.

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CHAPTER 1
POLICY

1-1. GENERAL:

a. Scope. This regulation provides basic policy, procedures and guidance for training pilots in the U-2/TR-1 aircraft. It is directive for units operating those aircraft. Specific training requirements for initial qualification, mission qualification, difference, continuation, recurrency, requalification, and instructor upgrade programs are defined. Pilot/aircraft limitations are also explained.

b. Objectives. The purpose of this regulation is to:

(1) Describe courses of training that will permit pilots to attain and maintain desired levels of proficiency.

(2) Define methods and procedures to be followed in accomplishing training requirements described.

(3) Define authority of each level of command with regard to provisions of this regulation.

(4) Consolidate all applicable training directives into a single document. Where this is not practicable or possible, specific reference is made to the applicable directive.

1-2. RESPONSIBILITIES:

a. HQ SAC and Command Echelons. HQ SAC command echelons must adopt procedures to ensure all training accomplished is mission oriented, provides maximum benefit and fosters optimum proficiency. Requirements of this regulation may not be decreased by subordinate levels of command. Information copies of directives/supplements that affect training described in any chapter of this regulation must be forwarded to HQ SAC/DOTT.

b. Numbered Air Forces. Major subordinate headquarters are responsible for supervising, monitoring and evaluating each unit's training program as well as providing assistance and guidance when necessary.

c. Director of Training (DOT). The DOT of each unit is responsible for development and publication of a plan for accomplishing training requirements specified in this regulation (SACR 60-9).

1-3. SAFETY:

a. Safety considerations and sound instructional practices must be an integral part of this training program. Training programs must be designed and administered within the limitations, specifications and proficiency standards contained in this regulation and other applicable directives. Commanders, supervisors, and instructors must be capable of identifying substandard or unsafe pilot performance so that they will receive additional training.

b. Units will ensure each pilot possesses an adequate knowledge of emergency procedures prior to start of flight training. Emphasis will be given to systems knowledge, situation analysis, engine out procedures and use of egress/survival equipment.

c. All landings accomplished during initial qualification, mission qualification, difference qualification or requalification training flights should be recorded on video tape.

1-4. EXPLANATION OF TERMS:

a. Basic Qualification. Status of a pilot who has satisfactorily completed those items or events needed to maintain skills necessary to fly the unit aircraft. The pilot must fly at minimum frequency necessary to meet sortie and flight standards.

b. Category A Pilots. Mission-ready pilots possessing less than 300 flying hours in the U-2/TR-1.

c. Category B Pilots. Mission-ready pilots possessing 300 flying hours or more in the U-2/TR-1.

d. Computerized Mission Accomplishment Report (CMAR). Computer generated form used to schedule/report accomplishment of training requirements. It will be used for fully qualified pilots performing continuation training flights.

e. Continuation Training. Training required to maintain qualified pilots at their assigned proficiency levels.

f. Difference Training. Programs designed to train a mission ready U-2/TR-1 pilot to qualified status in another series U-2/TR-1. U-2R and TR-1 aircraft are considered as same series aircraft.

g. Event. Unit of training identifiable as a separate part of the overall operation of a weapon system.

h. Flight Examiner (FE). The most experienced and qualified instructors who are designated to conduct the evaluation program.

i. Initial Qualification Training (Phase I). Training necessary to initially qualify a pilot in his/her basic aircrew position and flying duties.

j. Instructor Pilot (IP). A pilot selected by the unit commander based on experience, judgment, ability to instruct, flying skill and technical knowledge to instruct other pilots.

k. Level of Proficiency. Status assigned to pilots based on continuation training items they are required to complete.

(1) As a minimum, all pilots actively flying the U-2/TR-1 must maintain basic qualification levels.

(2) Mission-ready pilots who are downgraded from mission-ready status due to lack of proficiency/activity will be placed in nonmission-ready status. Training to regain mission-ready status will be directed by unit commander.

(3) Mission-ready pilots must maintain mission-ready status. This status is attained by completing initial and mission qualification training and being certified by unit commander as capable of performing unit's EWO mission. Pilots maintain their proficiency using the mission-ready continuation training program.

l. Mission Capable (MC). Status of a pilot who is capable of performing the primary unit mission but has not been certified mission-ready by the unit commander.

m. Mission-Ready (MR). Status of a pilot current in the U-2/TR-1 who has received sufficient training to enable successful performance of unit's EWO/operational missions and has been certified ready by unit commander. Only mission-ready pilots will be identified by R, E, or S crew number prefixes. Pilots current in the U-2C are considered mission-ready upon completion of SACR 60-4 evaluations. No requirement exists for U-2C pilots to EWO certify.

n. Mission Qualification Training (Phase II). Training necessary to qualify a pilot who has completed initial qualification as mission ready.

o. Non Mission-Ready (NMR). Status of a pilot who does not meet requirements for mission-ready or capable status.

p. Qualification Check. Check which includes events required by SACR 60-4, volume I.

q. Requalification. Training program a pilot will undergo to qualify for a previously held pilot position.

r. Supervised Flight. Flight conducted under direct supervision of an instructor pilot in the U-2CT/TR-1B or in a mobile control unit having two-way radio contact with the pilot.

s. Supervisory/Staff Pilot. Pilots in supervisory/staff positions who actively fly the U-2/TR-1.

t. Training Accomplishment Progress Report (TAPR). Computer generated or locally developed form used to schedule/report accomplishment of training requirements. It will be used for pilots in any qualification/upgrade phase of training.

u. Training Devices. All trainers, learning carousels and mockups designed to prepare pilots for flight training or to maintain proficiency.

v. Training Period. A six-month accounting period during which training requirements are completed. Semiannual periods are 1 January through 30 June and 1 July through 31 December.

w. Unsupervised Flight. Flight conducted without direct supervision of an instructor pilot.

1-5. ABBREVIATIONS:

AFCS	Automatic Flight Control System
AHRS	Attitude Heading Reference System
CDE	Command Directed Events
DR NAV	Dead Reckoning Navigation
FRS	Flight Reference System
IQ	Initial Qualification
LST	Life Support Training
MQ	Mission Qualification
PSD	Physiological Support Division
SACARMS	SAC Aircrew Resource Management System
SFO	Simulated Flame Out
WDE	Wing Directed Event

1-6. TRAINING DOCUMENTATION:

a. The TAPR is used to document all IQ, MQ, difference and requalification training. The TAPR may be computer generated or a locally developed form.

(1) The "Scheduled" column of the TAPR will be completed by a scheduling officer, scheduling NCO or IP. Whoever completes the "Scheduled" column must sign in the space provided for scheduler's signature.

(2) The column for scheduled activity is to be used for scheduling the number of times/hours that a training item is to be demonstrated or accomplished. The column under "Accomplished" is used in the same manner in denoting number of times/hours the training item was accomplished. The "Grade" column is used to denote grades for training accomplished. Proficiency for required training items will be noted in the "Remarks" section of TAPR.

(3) The "Accomplished/Grade" columns are completed after flight. Remarks are required for any deviation from scheduled activity. The IP and pilot must sign the completed TAPR. These entries will be completed with a black lead pencil.

(4) Remarks are mandatory. Instructor's comments should enable the mission review panel members to identify additional training required to ensure continuity of training.

(5) Responsibility for proper training entries and other documentation rests with the IP and training monitor. Active training folders will be maintained within the training squadron.

(6) Units will establish procedures for scheduling, documenting, reviewing and filing TAPRs.

(7) After review, and when computerized TAPRs are used, the information will be processed into SACARMS by the Operations Systems Management Branch and then filed in individual training folders.

b. A CMAR is used to document all continuation training flight activity.

(1) "Scheduled" colums of CMARs are completed and signed by the wing Mission Development Branch.

(2) "Accomplished" columns will be completed by each pilot after flight completion. The "Remarks" section will contain adequate explanation for deviation from scheduled activity/flying time. After flight entries will be made in black lead pencil only. The pilot must sign the CMAR.

(3) All CMARs will be reviewed by the mission review panel to validate information and its correct entry. Changes may be made by the panel based on best known information. After a CMAR is validated, it will be entered into SACARMS and filed IAW SACR 50-370. Once CMARs are validated by the panel, they should not be changed. If necessary to change validated CMAR data, use SAC Form 250, SACARMS Files Maintenance Data, to make adjustments. The SAC Form 250 must be approved by the unit DOT.

1-7. TRAINING RECORDS:

a. Establishment. Establish and maintain training folders.

(1) A training monitor will establish and maintain student training folders for pilots undergoing IQ, MQ, IP upgrade, difference and requalification training.

(2) When a training program has been completed, the training squadron will coordinate closeout of folder with the wing Replacement Training Branch.

(3) Following completion of training, each pilot's training folder will be retained for a period of one year IAW AFM 12-50, table 51-1, rule 5. The folder will contain training records, TAPRs and training waivers.

b. AF Form 1381, USAF Certification of Aircrew Training. Completion of SACR 51-13 training is documented on AF Form 1381 by the OPR for the training item IAW AFR 60-1/SAC Sup 1.

1-8. TRAINING TIME LIMITATIONS:

a. Pilots who require initial qualification, mission qualification, difference or requalification training are subject to the time requirements listed below:

(1) Qualification. Pilots must complete flying training within 120 days. Time commences on the date of first U-2/TR-1 flight.

(2) Difference. Time limit is 60 days for mission-ready pilots transitioning into a different series of U-2/TR-1. Time commences on the date of first flight in a different series aircraft.

(3) Requalification. Pilots must complete mission-ready training within 60 days. Time commences on the date of first U-2/TR-1 flight.

b. Extension of time limits are authorized under the following conditions:

(1) Number of days on emergency leave.

(2) Number of national holidays.

(3) Number of days on NFDS status.

(4) Number of days in TDY status.

(5) ORI exercises — seven days allowed.

(6) CEVG visits — ten days allowed.

c. Pilots should not normally be scheduled/authorized ordinary leave or TDY during training periods. Exceptions to this policy must be approved by the unit DO and documented in training folders.

1-9. TRAINING POLICIES:

a. Mission outlines in chapters 2, 3, and 5 are intended as guides for planning and scheduling purposes. Every effort should be made to accomplish specified training on each mission.

b. Nonmission-ready staff personnel flying the U-2/TR-1 require IQ training only.

c. All pilots are required to satisfactorily complete an IQ or proficiency evaluation prior to participating in unsupervised flight.

d. All CONUS based U-2/TR-1 pilots are required to maintain currency in both the U-2/TR-1 and T-38 aircraft. If not T-38 qualified/current IAW SACM 51-38 prior to unit assignment, qualification/currency training IAW SACM 51-38 will normally be accomplished prior to entry into U-2/TR-1 training.

e. Pilots scheduled for mission-ready duty will complete ten hooded instrument sorties in the T-38 prior to completing mission qualification training in the U-2/TR-1.

f. To ensure highest quality of training possible, each student will be assigned to a specific IP for a phase of training. Every effort will be made to retain that student/instructor matchup.

g. Initial/mission qualification academic training will be completed prior to beginning respective flight training programs. Exceptions to this policy are explained in paragraph 3-3.

h. Evaluations required by this regulation will be administered by the unit standardization/evaluation division IAW SACR 60-4. IQ checks will be administered by an evaluator other than a student's assigned IP.

i. Hooded instruments will not be logged or flown in a single seat U-2/TR-1. Hooded instruments may be flown and logged in the U-2CT or TR-1B.

j. Those training items listed with specific number of accomplishments are considered as training minimums. Pilots may, and are encouraged to, accomplish more than minimum requirements so as to increase proficiency.

k. Instructor Requirements:

(1) An IP must supervise all IQ, MQ, and requalification flight training until a SACR 60-4 check is completed.

(2) Instructors must be qualified and current IAW requirements of this regulation to be used as IP.

(3) Training/upgrade folders of pilots requiring inflight supervision must be reviewed by an IP prior to mission briefing for each sortie. Areas previously identified as marginal, unsatisfactory or unsafe must be reviewed and discussed in detail with the student.

l. Pilots identified to qualify in one series U-2/TR-1 and immediately difference train into another series are not required to undergo mobile training for the initially qualified series aircraft.

1-10. COMBAT CREW CAPABILITIES AND UTILIZATION MEETING (CCCU):

a. The unit DOT will conduct a monthly CCCU meeting. Its purpose will be to review unit crew structure and determine necessary changes to maximize use of crew resources to optimize unit capability. The meeting must convene no later than the fifth workday of each month and may be convened more frequently as desired. The DOT is designated as office or primary responsibility.

b. As a minimum, the following personnel must attend:

(1) Wing Commander or Vice Commander (Chairperson).

(2) Deputy Commander for Operations.

(3) Chief, Operations and Training Division.

(4) Squadron Commanders or Operations Officers.

(5) Chief, Standardization/Evaluation Division.

(6) Chief, Mission Development Branch.

(7) Chief, Operations Systems Management Branch.

(8) Operations Plans Division representative.

(9) Chief, Replacement Training Branch.

c. The CCCU meeting must review the following:

(1) Minutes of previous meeting.

(2) Status of continuation training.

(a) Comparison of authorized and mission-ready pilot numbers.

(b) Comparison of sorties requested, contracted and flown.

(c) Review percentage of continuation training completed. At the end of each six month training period, all continuation training not completed will be reviewed by individual pilot.

(3) Status of qualification training programs being conducted.

(4) Programmed personnel losses and gains.

(5) Planned pilot changes to include upgrades to IP status and difference training courses.

d. The DOT will publish and distribute a copy of CCCU meeting minutes to all required attendees not later than the 15th of each month. One copy will be forwarded to HA SAC/DPROR/DORSU/DOTTS and NAF/DOR.

1-11. APPLICANTS TO U-2/TR-1 PROGRAM:

a. Initial pilot applicant screening, TDY interviews, etc. are IAW AFR 36-20. Experience limited to ATC is not sufficient. Propeller time alone is not adequate and will not be waived. When an applicant is accepted by the unit, a summary of the applicant's professional records and IP comments for each interview flight will be forwarded by message to 14AD/DO, 15AF/DO and HQ SAC/DO for final approval.

b. Applicants for the program will accomplish an altitude chamber flight and fly the U-2CT in a pressure suit on one interview flight. Particular attention during these flights should be focused on detecting claustrophobic tendencies, apprehension and other factors which would impair a pilot's ability to work in a pressure suit environment.

1-12. PUBLICATION ADMINISTRATION:

a. Strategic Air Command is designated the MAJCOM of Primary Responsibility (MCOPR) for this regulation by HQ USAF/XOO IAW AFR 60-1, chapter 4.

b. Suggestions and recommendations for changes are encouraged and will be forwarded through command channels to HQ SAC/DOTT on AF Form 847, Recommendation for Change of Publication, IAW AFR 60-9.

1-13. WAIVER AUTHORITY:

a. HQ SAC/DOT possesses waiver authority for all training requirements directed by this regulation. Waiver requests are submitted to the Numbered Air Force/DOT, with information copies to SAC/DOTT. Numbered Air Force/DOT will submit approval or disapproval recommendations to HQ SAC/DOTT.

b. Waiver requests will be in the following format:

(1) Type waiver — reference, regulation, paragraph, and program.

(2) Name, rank, type aircraft.

(3) Flying time (total time and total time in aircraft) plus additional breakdown if pertinent to waiver request.

(4) Date of first flight. Required only for waiver of qualification time limits.

(5) Reason for waiver request and any other pertinent information bearing on the request.

1-14. INTERPRETATION PROCEDURES:

To enable all echelons of command to comply with the intent of this regulation, HQ SAC will provide additional guidance when needed. This is normally done by interpretation messages which are numbered consecutively throughout the calendar year; for example, 81-1, 81-2, etc. The first two digits indicate the calendar year. The second group indicates the number of the interpretation messages dispatched during the year.

CHAPTER 2

INITIAL QUALIFICATION TRAINING (PHASE I)

2-1. SCOPE:

This chapter prescribes minimum pilot training requirements for initial qualification in the U-2/TR-1.

2-2. ACADEMIC TRAINING:

a. Policy:

(1) U-2/TR-1 students will complete IQ academics (Item A59) for their designated series aircraft prior to flying IQ missions.

(2) A pilot designated for direct transition from U-2CT to the U-2R/TR-1 will also complete LST 1 and 2 for the U-2CT and be briefed by an IP on appropriate emergency procedures prior to flying the U-2CT. This training profile is explained in paragraphs 2-3 and 2-3 (Profile II).

(3) All U-2/TR-1 pilots must complete ATC Survival Course S-V83-A. Pilots may be declared mission-ready prior to attending this course, however, they must not be deployed on operational duty until it has been completed.

(4) All U-2/TR-1 pilots must complete ATC Survival Course S-V86-A in full pressure suit prior to initial operational deployment. Additional pool training in full pressure suit should be administered locally by PSD instructors prior to course attendance.

b. Item Description (A59, 74.5 Hours):

SUBJECT	OPR	HOURS
Aircraft Field Trip	IP	1.0
Airframe	FTD/IP	1.0
Fuel System	FTD/IP	2.0
Engine	FTD/IP	1.0
Electrical Systems	FTD/IP	2.0
Hydraulic Systems	FTD/IP	1.0
Flight/Gust Controls	FTD/IP	1.0
Landing Gear and Brakes	FTD/IP	0.5
Air Conditioning and Pressurization	FTD/IP	1.0
Oxygen Systems	FTD/IP	1.0
AHRS/FRS and AFCS	AMS	1.0
AHRS/FRS and AFCS Troubleshooting	AMS	1.0
Physiological Aspects of High Altitude	PSD	4.0
Flight and Pressure Suit Assembly Indoctrination		
LST 1 and 2	PSD	3.0
Pressure Suit Fit, Chamber Flight, Cockpit Familiarization and Ground Egress	PSD	6.0
Pressure Suit Pool Training	PSD	4.0
Section 1 — Description	IP	3.0
Section 2 — Normal Procedures	IP	6.0
Section 4 — Auxiliary Equipment (Unclassified)	IP	1.0
Section 5 — Operating Limitations	IP	2.0
Section 6 — Flight Characteristics	IP	2.0
Section 7 — All Weather Operations	IP	1.0
Appendix 1 — Performance	IP	1.0
Section 3 — Emergency Procedures	IP	6.0
*Local Operating Procedures	IP	2.0
*Visual Aids and Flight Observations	IP	8.0
Cockpit Time	IP	6.0
SACR 60-4 Exams	DOV	6.0

*Items denoted by asterisk are not required for pilots in requalification or difference training.

c. Item Objectives:

(1) Aircraft Field Trip. To provide student with a general knowledge of the U-2/TR-1 airframe, aircraft instrumentation and location of all flight and systems controls prior to other academic training.

(2) Airframe. To understand construction, capabilities and limitations of the U-2/TR-1 airframe.

(3) Fuel System:

(a) To gain a thorough understanding of aircraft fuel sequencing and fuel tank pressurization systems.

(b) To learn proper operation of transfer systems.

(c) To understand fuel dumping.

(4) Engine:

(a) To understand basic characteristics and components of J-75 engine.

(b) To understand engine fuel and oil systems.

(c) To understand pressure ratio, bleed valve, exhaust gas temperature and fire/overheat detection systems.

(d) To be able to interpret and use engine instruments.

(e) To understand operation of normal and continuous ignition systems.

(f) To learn all engine limitations.

(g) To learn normal and emergency engine operating procedures including normal and emergency fuel control systems.

(5) Electrical Systems:

(a) To identify all controls, components and instrumentation of the electrical systems.

(b) To understand distribution of DC power and learn normal and emergency operation of the DC system.

(c) To understand distribution of AC power and learn normal and emergency operation of the AC system.

(6) Hydraulic Systems:

(a) To understand functions of the hydraulic system with respect to operation of flaps, speedbrakes, landing gear and fuel boost drive motor.

(b) To understand results of hydraulic system failure.

(7) Flight/Gust Controls:

(a) To learn operation of ailerons, elevators, and rudders.

(b) To learn operation and effect of aileron and elevator trim system.

(c) To understand aerodynamic and structural effects of placing ailerons and flaps in gust position.

(d) To learn operation of gust control.

(e) To learn function and operation of stall strips.

(8) Landing Gear and Brakes:

(a) To understand normal and emergency operation of landing gear.

(b) To understand limitations of tail wheel steering system.

(c) To understand operation and limitations of wheel brakes.

(9) Air Conditioning and Pressurization:

(a) To learn normal and emergency operation of air conditioning and pressurization system.

(b) To learn operation and function of seal valves.

(c) To understand effect of electrical failure on air conditioning and pressurization system.

(10) Oxygen Systems:

(a) To learn function of oxygen system.

(b) To learn normal and emergency operation of oxygen system.

(c) To understand indications of oxygen warning lights on the annunciator panel.

(11) AHRS/FRS and AFCS:

(a) To develop a basic understanding of the AHRS/FRS.

(b) To learn operation of the AHRS/FRS in slaved, directional and compass modes.

(c) To gain a basic understanding of the AFCS.

(d) To learn function and operation of the AFCS pitch axis during Mach Hold operation.

(e) To learn function and operation of the AFCS roll axis during Heading Hold and Heading Select operation.

(f) To learn function and operation of automatic trim feature.

(12) AHRS/FRS and AFCS Troubleshooting:

(a) To understand AFCS and AHRS/FRS malfunctions, particularly those which occur at altitude.

(b) To be able to make proper potentiometer adjustments in flight.

(c) To be able to analyze inflight malfunctions.

(d) To understand why AFCS and AHRS/FRS evaluations should be made only at cruise altitude.

(13) Physiological Aspects of High Altitude Flight and Pressure Suit Assembly:

(a) To learn physiological aspects of extreme altitude flight.

(b) To understand function and operation of pressure suit.

(c) To understand function and operation of seat kit and all associated equipment.

(14) LST 1 and 2 — as outlined in SACR 50-24.

(15) Pressure Suit Fit, Chamber Flight, Cockpit Familiarization and Ground Egress.

(a) Initial fitting and UCD sizing.

(b) To become familiar with PSD hookup and cockpit environment, ground egress and tree lowering device procedures.

(16) Section 1 — Description. To learn aircraft's basic equipment and dimensions.

(17) Section 2 — Normal Procedures:

(a) To learn procedures and techniques performed during flight under normal conditions.

(b) To discuss and explain each item of pilot's normal procedures amplified checklist as contained in Flight Manual, Section 2.

(18) Section 4 — Auxiliary Equipment (Unclassified). To learn operation and function of unclassified equipment.

(19) Section 5 — Operating Limitations. To learn and understand operating limitations listed in Section 5 of Flight Manual.

(20) Section 6 — Flight Characteristics. To learn and understand flight characteristics described in Section 6 of Flight Manual including effects of overspeed and Mach tuck.

(21) Section 7 — All Weather Operations. To learn and understand all weather procedures described in Section 7 of Flight Manual.

(22) Appendix 1 — Performance:

(a) To learn and understand aircraft performance data in Flight Manual, Appendix 1, particularly the normal cruise, alternate cruise and maximum endurance sections.

(b) To learn and understand procedures for flying maximum altitude and maximum range cruise missions.

(c) To learn and understand diversion procedures.

(23) Section 3 — Emergency Procedures:

(a) To learn and understand all actions, warnings, cautions and notes for all emergencies described in Section 3 of Flight Manual.

(b) To learn all immediate response items of emergency procedures checklist.

(c) To discuss situational emergencies and systems response.

(d) To understand ramifications of engine flameout.

(24) Local Operating Procedures. To understand local operating and air traffic control procedures peculiar to U-2/TR-1 operations. Hung pogo pattern and procedures should be thoroughly briefed.

(25) Visual Aids and Flight Observations. Prior to start of U-2/TR-1 training, each student will become thoroughly familiar with its critical airborne, landing and ground handling characteristics. This training will include:

(a) Comprehensive review of all available U-2/TR-1 accident resumes with an IP.

(b) Review of selected video tapes/films of U-2/TR-1 takeoff and landing activities with an IP.

(c) Observation of ten U-2/TR-1 landings with an IP from mobile vehicle.

(26) Cockpit Time. To understand and be able to accomplish:

(a) A proper exterior aircraft preflight.

(b) Operation of all aircraft and systems controls IAW Flight Manual.

(c) Preflight cockpit check (both cockpits if applicable).

(d) Engine start checklist (engine will not be started).

(e) After engine start checklist.

(f) Before takeoff checklist.

(g) Emergency Procedures Check. Student will be evaluated on immediate recall and ability to execute all bold print items in the Emergency Procedures Checklist.

(27) SACR 60-4 Exams. Each pilot must satisfactorily accomplish SACR 60-4 exams prior to first flight. Unit Standardization/Evaluation Division will administer these exams IAW SACR 60-4, volume I, covering the following areas:

(a) Flying Specialty Phase (open book exam).

(b) Emergency Procedures General Knowledge (closed book).

(c) Emergency Procedures General Knowledge (closed book).

(d) Comprehensive oral evaluation on systems knowledge and situational emergencies.

2-3. FLYING TRAINING:

a. Policy:

(1) Pilots training for mission-ready duty will complete ten hooded instrument flights in the T-38 prior to completing U-2/TR-1 mission qualification training.

(2) U-2CT inflight engine shutdown/restart will be accomplished by students with an IP. This is planned for IQ 3 but may be accomplished on other flights if timely accomplishment is prevented by adverse operational factors, i.e., weather.

(3) IQ sorties may be flown on successive days provided ample time is available for student briefing/critique. No more than three sorties will be flown in any one week period.

(4) U-2C designated students will fly all U-2CT missions in the front seat. U-2R/TR-1 designated students will fly all U-2CT missions in the rear seat. All student IQ missions flown in the TR-1B will be in the front seat.

(5) Students may complete IQ training using one of two training profiles (see paragraph 2-4) depending on availability of compatible trainer aircraft. A compatible trainer for the U-2C is the U-2CT. A compatible trainer for the U-2/TR-1 is the TR-1B.

(a) Profile I — Compatible trainer available.

(b) Profile II — U-2R/TR-1 designated pilot without TR-1B available. IQ 1 through IQ 4 will be flown in the U-2CT.

(6) When using Profile II, the IP will certify on the U-2CT IQ 4 TAPR that U-2R/TR-1 designated pilots are cleared for further progression into the U-2R/TR-1.

(7) IQ 1 through IQ 5 and IQ 6 through IQ 10 will be flown in the same series aircraft.

(8) Pogos will not be installed for touch-and-go landings in the U-2R/TR-1. Mission profile references to touch-and-go landings with pogos or pogo retention after takeoff in the U-2R/TR-1 should be disregarded.

b. Training Procedures. The following activities will be accomplished on each IQ mission:

(1) Briefing:

(a) Mission requirements and detailed instruction on how to accomplish requirements.

(b) Schedule of events.

(2) Emergency Procedures. IP will check student on flight manual instant response items and situational emergencies.

(3) Preflight:

(a) Aircraft preflight under IP supervision.

(b) Cockpit preflight under IP supervision.

(4) Debrief and Critique. Debriefs after each IQ flight must include a complete rerun and discussion with student of all film/video tapes (when available) covering the flight. The critique must be completed prior to next flight.

2-4. IQ TRAINING PROFILES:

CODE	ITEM	PROFILE I	PROFILE II
A59	IQ Academ;ics	1	1
K01	IQ 1	1	1
K02	IQ 2	1	1
K01	IQ 3	1	1
K04	IQ 4	1	1
K05	IQ 5 (60-4)	1	
K06	IQ 6		1
K07	IQ 7		1
K08	IQ 8		1
K09	IQ 9		1
K10	IQ 10 (60-4)		1
K11	IQ Extra	A/R	A/R

2-5. IQ MISSION OUTLINES:

a. K01 IQ Mission 1 (U-2CT/TR-1B):

(1) Purpose. To familiarize student with flight characteristics, traffic patterns and landings.

(2) Duration. Approximately 2.5 hours.

(3) Pressure Suit. Not required.

(4) Crew. Dual.

(5) Requirements:

(a) Engine Start (IP demonstrated).

(b) Taxi Familiarization. This will consist of one slow speed and one high speed (30 knots) run. High speed portion will be done on the runway prior to takeoff.

(c) Takeoff and Climb:

Takeoff (IP demonstrated), retain pogos (U-2CT), leave gear down, climb speed — 160 knots.

Climb checklist.

(d) Normal Inflight Procedures:

Level off — 15,000 feet, extend speedbrakes, open bleed valves, extend stall strips and reduce airspeed to 120 knots.

Check fuel balance.

(e) Flight Characteristics:

Turns, climbs, and descents.

Acceleration and deceleration.

Check fuel balance.

Approach to stalls — gear down, speedbrakes out, stall strips extended, flaps at 0°, 15°, 25°, and full.

Gust control familiarization.

Spoiler operation (TR-1B)

(f) Descent — 160 knots maximum.

(g) Landings and Go Arounds:

Normal landing patterns, low approaches and go arounds. IP demonstrates one, student practices three.

Day touch-and-go landings with pogos installed (U-2CT). IP demonstrates one, student practices four.

Make additional touch-and-go landings if fuel permits.

Pogos may be dropped at IP discretion based on student's progression, however, the minimum specified number of pogo landings should be accomplished.

No-voice landings and SFO patterns may be practiced at IP discretion based on student progression in normal landings.

Day full stop landing.

b. K02 IQ Mission 2 (U-2CT/TR-1B):

(1) Purpose. To familiarize student with systems operation, instrument procedures, SFO patterns and practice patterns and landings.

(2) Duration. Approximately 2.5 hours.

(3) Pressure Suit. Not required.

(4) Crew. Dual.

(5) Requirements:

(a) Takeoff and Climb:

Takeoff. U-2CT pogos may be dropped or retained at IP discretion based on student progression during IQ 1.

Climb speed — 160 knots.

Climb checklist.

(b) Normal Inflight Procedures.

(c) Flight Characteristics:

Turns, climbs, and descents.

Autopilot familiarization.

(d) Instrument Procedures:

TACAN/ADF familiarization.

Holding, penetration, and nonprecision low approach.

PAR or ILS approach.

(e) Emergency Procedures. SFO patterns. IP demonstrates both full flap and no-flap patterns, student practices two of each.

(f) Landings:

Day touch-and-go landings (four). IP demonstrates one no-voice landing, student practices no-voice landing.

No-flap touch-and-go landings. IP demonstrates one, student practices no-flap touch-and-go landings.

Day full stop landing. If wind conditions permit, U-2CT will use drag chute for this landing.

c. K03 IQ Mission 3 (U-2CT/TR-1B):

(1) Purpose. To familiarize student with flight characteristics and emergency procedures at high altitude.

(2) Duration. Approximately 3 hours.

(3) Pressure Suit. Required.

(4) Crew. Dual.

(5) Requirements:

(a) Takeoff. Climb using the autopilot including Mach Hold function.

(b) Normal Inflight Procedures:

Cruise climb placing emphasis on throttle technique and maintaining airspeed schedule.

Driftsight familiarization.

Autopilot practice including Mach buffet demonstration.

Manual flight with and without trim available.

(c) Emergency Procedures:

Emergency gear extension. Recycle landing gear with normal system before landing.

Manual fuel check and engine shutdown/restart.

Simulated flameout glide to high key.

Two SFO patterns (one no-flap and one full flap).

(d) Instrument Procedures:

Standard Instrument Departure.

PAR or ILS approach.

(e) Landings:

Two day touch-and-go landings (one no-voice).

One no-flap touch-and-go landing.

Day full stop landing.

NOTE: If engine shutdown/restart is not accomplished on this mission, it will be accomplished during MQ 2 or an additional dual sortie generated specifically for that purpose.

d. K04 IQ Mission 4 (U-2CT/TR-1B):

(1) Purpose. To familiarize student with night patterns and landings. Plan this mission for takeoff before sunset so that best transition into night activity is possible.

(2) Duration. Approximately 2.5 hours.

(3) Pressure Suit. Not required.

(4) Crew. Dual.

(5) Requirements:

(a) Takeoff and Climb.

(b) Normal Inflight Procedures:

Level off at initial penetration altitude.

ATC procedures.

(c) Instrument Procedures:

Standard Instrument Departure.

Holding pattern (entry and circuit).

PAR and ILS (one each).

(d) Emergency Procedures. Two day SFO patterns (one full flap and one no-flap).

(e) Landings:

Day touch-and-go landings (one no-voice, one no-flap).

Two night touch-and-go landings.

Make additional touch-and-go landings if fuel permits.

Night full stop landing.

e. K05 IQ Mission 5 (U-2CT/TR-1B):

(1) Purpose. To accomplish initial qualification check for unsupervised flight.

(2) Duration. Approximately 1.5 hours.

(3) Pressure Suit. Not required.

(4) Crew. Dual.

(5) Requirements:

(a) Start, taxi and takeoff.

(b) ATC Procedures.

(c) Penetration and one nonprecision low approach.

(d) One PAR or ILS approach.

(e) Two SFO patterns (one full flap, one no-flap).

(f) Touch-and-go landings (at least one no-voice and one no-flap).

(g) Full stop landing.

f. K06 IQ Mission 6:

(1) Purpose. To familiarize student with flight characteristics, traffic patterns and landings.

(2) Duration. Approximately 2.5 hours.

(3) Pressure Suit. Not required.

(4) Crew. Solo.

(5) Requirements:

(a) Taxi Familiarization. This will consist of one slow and one high speed (30 knots) run. High speed portion will be done on runway prior to takeoff.

(b) Takeoff and Climb:

Takeoff (95%), leave gear down, climb speed — 160 knots.

Climb checklist.

(c) Normal Inflight Procedures:

Level off — 15,000 feet, extend speedbrakes, open bleed valves, extend stall strips and reduce airspeed to 120 knots.

Check fuel balance.

(d) Flight Characteristics:

Turns, climbs, and descents.

Acceleration and deceleration.

Check fuel balance.

Approach to stalls — gear down, speedbrakes out, stall strips extended, flaps at 0°, 15°, 25°, and full.

Gust control familiarization.

Spoiler familiarization (R/TR).

(e) Descent — 160 knots maximum.

(f) Landings and Go Arounds:

Normal landing patterns, low approaches and go arounds (minimum of three).

Four touch-and-go landings.

Make additional touch-and-go landings if fuel permits.

No-voice landings and SFO patterns may be practiced at IP discretion based on student progression in normal landings.

Day full stop landing.

g. K07 IQ Mission 7:

(1) Purpose. To familiarize student with systems operation, instrument procedures, SFO patterns and practice patterns and landings.

(2) Duration. Approximately 2.5 hours.

(3) Pressure Suit. Not required.

(4) Crew. Solo.

(5) Requirements:

(a) Takeoff and Climb.

Takeoff — 95%.

Climb speed — 160 knots.

Climb checklist.

(b) Normal Inflight Procedures.

(c) Flight Characteristics:

Turns, climbs, and descents.

Autopilot familiarization.

(d) Instrument Procedures:

TACAN/ADF familiarization.

Holding, penetration and nonprecision low approach.

PAR or ILS approach.

(e) Emergency Procedures. SFO patterns (both full flap and no-flap patterns, practice two of each).

(f) Landings:

Four day touch-and-go landings (one no-voice).

No-flap touch-and-go landings if proficiency in normal patterns and fuel remaining permits.

Day full stop landing. If wind conditions permit, U-2C/CT will use drag chute for this landing.

h. K08 IQ Mission 8:

(1) Purpose. To familiarize student with flight characteristics and emergency procedures at high altitude.

(2) Duration. Approximately 3 hours.

(3) Pressure Suit. Required.

(4) Crew. Solo.

(5) Requirements:

(a) Takeoff. Climb using the autopilot including Mach Hold function.

(b) Normal Inflight Procedures:

Cruise climb to above FL600.

Autopilot and driftsight familiarization.

Manual flight with and without trim available.

(c) Emergency Procedures:

Emergency gear extension. Recycle landing gear with normal system before landing.

Simulated flameout descent and glide to high key.

Two SFO patterns (one no-flap and one full flap).

(d) Instrument Procedures:

Standard Instrument Departure.

PAR or ILS approach.

(e) Landings:

Two day touch-and-go landings (one no-voice).

One no-flap touch-and-go landing.

Day full stop landing.

i. K09 IQ Mission 9:

(1) Purpose. To familiarize student with night patterns and landings. Plan this mission for takeoff before sunset so that best transition into night activity is possible.

(2) Duration. Approximately 2.5 hours.

(3) Pressure Suit. Not required.

(4) Crew. Solo.

(5) Requirements:

(a) Takeoff and climb.

(b) Normal Inflight Procedures:

Level-off at initial penetration altitude.

ATC procedures.

(c) Instrument Procedures:

Standard Instrument Departure.

Holding pattern (entry and circuit).

PAR and ILS (one each).

(d) Emergency Procedures. Two day SFO patterns (one full flap and one no-flap).

(e) Landings:

Day touch-and-go landings (one no-voice and one no-flap).

Two night touch-and-go landings.

Make additional touch-and-go landings if fuel permits.

Night full stop landing.

j. K10 IQ Mission 10:

(1) Purpose. To accomplish initial qualification check for unsupervised flight.

(2) Duration. Approximately 1.5 hours.

(3) Pressure Suit. Not required.

(4) Crew. Solo.

(5) Requirement:

(a) Start, taxi, and takeoff.

(b) ATC procedures.

(c) Penetration and one nonprecision low approach.

(d) One PAR or ILS approach.

(e) Two SFO patterns (one full flap, one no-flap).

(f) Touch-and-go landing (at least one no-voice and one no-flap).

(g) Full stop landing.

2-6. MINIMUM IQ TRAINING REQUIREMENTS:

CODE	ITEM	PROF I	PROF II (U-2CT)	PROF II (IQ 6-10)
V16	Mission Planning	4	0	4
V17	Aircraft Preflight	3	0	3
V18	Checklist Procedures	4	4	4
V19	Start and Taxi	3	3	4
V20	Taxi Familiarization	1	1	1
V21	ATC Procedures	2	2	2
V22	Takeoff	3	3	4
V25	Standard Instrument Departure	2	2	2
V26	Level Off	3	3	3
V29	Flight Characteristics	1	1	1
V31	Cruise Climb	1	1	1
V34	Autopilot Familiarization	1	1	1
V35	Driftsight Familiarization	1	1	1
V41	Emergency Gear Extension	1	1	1
V42	Descent	2	2	2
V45	Engine Shutdown/Restart (Dual)	1	1	0
V49	TACAN/ADF Familiarization	1	1	1
V50	Holding Pattern	2	2	2
V51	Penetration	2	2	2
V53	PAR	2	2	2
V54	ILS	2	2	2
V55	Non Precision Approach	1	1	1
V56	Missed Approach	1	1	1
V60	Landing Patterns	6	6	6
V62	Touch-and-Go Landings	6	6	6
V63	No-Flap Landings	3	3	3
V64	Night Touch-and-Go Landings	2	2	2
V65	No-Voice Landings	3	3	3
V66	Touch-and-Go Landings (C/CT only)	4	4	0
V67	Day Full Stop Landing	2	2	2
V68	Night Full Stop Landing	1	1	1
V69	Full Stop Landing — Drag Chute (C/CT only)	1	0	0
V70	SFO Pattern	6	6	6
V71	SFO — Full Flaps	3	3	3
V72	SFO — No Flaps	3	3	3

CHAPTER 3

MISSION QUALIFICATION AND DIFFERENCE TRAINING (PHASE II)

3-1. SCOPE:

a. Purpose. MQ training is designed to upgrade pilots who have completed IQ training or who are at basic proficiency levels to MR status. Pilots will not be declared MR until all MQ academic and flight training requirements are completed. MQ training terminates when a pilot successfully completes SACR 60-4 evaluation checks and wing commander (or representative) EWO certification. EWO certification is not required for U-2C MR pilot status.

b. Flight Currency. If for any reason during MQ training, a pilot does not fly the U-2/TR-1 for a period exceeding 10 duty days, a low altitude proficiency sortie must be flown prior to the next high altitude sortie.

3-2. PREREQUISITES:

Before entering MQ training, pilots must successfully complete all IQ training in the applicable series aircraft.

3-3. ACADEMIC TRAINING:

a. Policy. All MQ academic training (Item A60) will be completed before beginning MQ flight training. Exceptions:

(1) MQ 1, the low altitude initial solo sortie, can be flown before beginning or during MQ academic training. The need for additional low altitude proficiency sorties will depend upon the length of academic training.

(2) A60 items with double asterisks may be accomplished after start of MQ flight training but must be completed before MR status can be achieved.

b. Item Description (Item A60):

SUBJECT	OPR	HOURS
*High Altitude Weather	WX	1.0
Mission Planning Procedures	IP/NAV	3.0
Preflight/Inflight Log Procedures	IP	1.0
*Photo Flight Line Techniques	IP	3.0
Navigation Systems and Procedures (R/TR)	IP/FSR	4.0
*Dead Reckoning Navigation	IP/NAV	1.0
Section 4 — Auxiliary Equipment (Classified)	IP	3.0
**Defensive System Training (R/TR)	IP/FSR/DOX	3.0
**FCF Procedures	IP	1.0
**Mobile Training	IP	A/R
**Communications Training and Testing (R/TR)	KTR	4.0
**Tactical Doctrine Study and Testing (R/TR)	DOX	4.0
**EWO Certification and Study (U-2R only)	DOX	16.0

NOTE: *Items not required in difference or requalification training.

c. Item Objectives:

(1) High Altitude Weather. To familiarize the pilot with weather phenomena which affect flight at high altitude.

(2) Mission Planning Procedures:

(a) To know pilot's and mission planner's responsibilities in planning high altitude missions.

(b) To learn procedures used to plan photographic runs.

(3) Preflight and Inflight Procedures. To learn required preflight/inflight entries and use of pilot's log.

(4) Photo Flight Line Techniques. To learn and understand proper methods of maintaining/correcting course while on photographic runs.

(5) Navigation Systems and Procedures (R/TR). To learn operations, functions, procedures and techniques using LN-33 navigation system. Training will consist of the following:

(a) Fly an LN-33 training route with a minimum duration of 1.5 hours and with NAV function of the autopilot engaged.

(b) Practice on manual update.

(c) Practice direct steering procedures.

(6) Dead Reckoning Navigation. To learn dead reckoning procedures and techniques. Minimum requirements of a training mission DR NAV leg are:

(a) Duration of one hour.

(b) Fix at start and end of leg.

(c) One fix every 15 minutes.

(d) Off course corrections as required.

(e) ETA at destination and turning points as applicable.

NOTE: Authorized Aids. TACAN and ADF fixes are primary while visual fixes are secondary.

(7) Section 4 — Auxiliary Equipment (Classified):

(a) To know and understand capabilities and limitations of photographic and other intelligence gathering systems.

(b) To learn normal and emergency operation of these systems.

(8) Defensive System Training (R/TR):

(a) To understand function, capabilities, and limitations of the systems.

(b) To learn normal and emergency operation of the systems.

(c) Systems simulator training if available.

(9) FCF Procedures. To learn FCF requirements and procedures.

(10) Mobile Training:

(a) Review all launch/recovery procedures with an IP.

(b) Demonstrate proficiency in an aircraft preflight to an IP. NAV computer preflight may be simulated if no activity is scheduled.

(c) Control a minimum of two high flights while being supervised by an IP.

(d) Control one low sortie with at least one touch-and-go no-flap landing (giving altitude calls) while being supervised by an IP.

(e) Control a minimum of one night low sortie while being supervised by an IP.

(f) Demonstrate proficiency to an FE by controlling a high flight in its entirety.

(g) Pilots previously MR in a U-2/TR-1 need to demonstrate proficiency in items (a) thru (d) above and accomplish a mobile check.

(11) Communications Training and Testing (R/TR). To provide training in use of communications equipment, systems and procedures required for accomplishment of the reconnaissance mission. Instruction will be given by wing tactical communicators.

(12) Tactical Doctrine Study and Testing (R/TR):

(a) Ensure pilots have a sufficient knowledge of all tactics and procedures to effectively perform their unit's EWO mission.

(b) Briefing and study will be conducted by a squadron tactical doctrine study officer. Testing will be administered by DOX.

(13) EWO Study and Certification (U-2R only). EWO study will be completed by EWO plans personnel to include unit mission briefing. Upon EWO study completion, student will be certified by the wing commander or a designated representative.

3-4. FLYING TRAINING:

a. Pilots will complete the following on each MQ mission:

(1) Attend mission briefing.

(2) Assist mission planner in preparing a complete flight plan.

(3) Conduct each phase of mission IAW flight manual procedures and other established directives.

(4) Attend maintenance debrief.

(5) Debrief flight with assigned IP immediately after flight.

(6) Attend navigation and photo critiques.

b. All MQ missions will be flown in the same series aircraft.

3-5. MQ MISSION OUTLINES:

a. Q01 MQ Mission 1:

(1) Purpose. To provide currency and proficiency training to pilots undergoing MQ academic training.

(2) Duration. Approximately 2 hours.

(3) Pressure Suit. Not required.

(4) Crew. Solo.

(5) Requirements:

(a) Takeoff and climb to holding pattern altitude.

(b) Enter and complete one holding pattern.

(c) Penetration with a nonprecision approach.

(d) PAR or ILS approach.

(e) Four SFO patterns (two no-flap and two full flap).

(f) Landings:

Two no-flap touch-and-go landings.

Two touch-and-go landings.

Full stop landing.

b. Q02 MQ Mission 2:

(1) Purpose. To acquaint student with basic FCF procedures and validate aircraft control at high altitude and clearance for unsupervised high flight.

(2) Duration. Approximately 3 hours.

(3) Pressure Suit. Required.

(4) Crew. Dual if compatible trainer available.
Solo if no compatible trainer available.

(5) Requirements:

(a) Takeoff and turn on required equipment.

(b) Cruise climb on briefed route.

(c) Accomplish selective non-critical items of an FCF profile, i.e. manual fuel check, electrical system checks, autopilot checks, etc.

(d) Maintain flight logs.

(e) Autopilot off at termination of flight for approximately ten minutes.

(f) Dual engine shutdown/restart if not previously accomplished.

(g) Penetration with PAR or ILS.

(h) Full stop landing. If wind conditions permit, U-2CT will use drag chute for this landing.

NOTE: If flown solo, an extensive IP briefing to cover FCF pacing will be accomplished before flight.

c. Q03 MQ Mission 3:

(1) Purpose. To familiarize student with DR navigation, aerial photography and aircraft control at high altitude.

(2) Duration. Approximately 4 hours.

(3) Pressure Suit. Required.

(4) Crew. Solo.

(5) Requirements:

(a) Takeoff and turn on required equipment. Climb on briefed route to cruising altitude using cruise climb procedures.

(b) One DR NAV or LN-33 leg.

(c) One hour minimum of photographic flight line runs without reference to LN-33 or TACAN.

(d) Exercise systems, if available.

(e) Solo manual fuel check and engine shutdown/restart. This item not required for difference or requalification programs.

(f) Penetration with PAR or ILS approach.

(g) Full stop landing. If wind conditions permit, U-2C will use drag chute for this landing.

NOTE: Mission should be planned for three hours back to local area. If solo engine shutdown/restart is not accomplished, MQ 10 will be flown in any sequence, including after final qualification check, until solo engine shutdown/restart is accomplished.

d. Q04 MQ Mission 4:

(1) Purpose. To familiarize student with navigation, aerial photography and aircraft control at high altitude.

(2) Duration. Approximately 6 hours.

(3) Pressure Suit. Required.

(4) Crew. Solo.

(5) Requirements:

(a) Takeoff and turn on required equipment. Climb on briefed route to cruising altitude.

(b) One DR NAV or LN-33 navigation leg of 1.5 hours duration.

(c) LN-33 orientation exercise for approximately one hour.

(d) One hour minimum of photographic flight line runs without reference to LN-33 or TACAN.

(e) Let down from high altitude to base altitude, autopilot off.

(f) Penetration with PAR or ILS approach.

(g) Full stop landing. If wind conditions permit, U-2C will use drag chute for this landing.

NOTE: LN-33 training is desired of this mission but may be accomplished on MQ 6, 7 or 8.

e. Q05 MQ Mission 5:

(1) Purpose. To further familiarize student with instruments, SFO patterns and landing patterns.

(2) Duration. Approximately 2 hours.

(3) Pressure Suit. Not required.

(4) Crew. Solo.

(5) Requirements:

(a) Takeoff and climb to holding pattern altitude.

(b) Enter and complete one holding pattern.

(c) Penetration with a nonprecision approach.

(d) One PAR or ILS approach.

(e) Two SFO patterns.

(f) One touch-and-go landing.

(g) One no-flap touch-and-go landing.

(h) Full stop landing. If wind conditions permit, U-2C will use drag chute for this landing.

f. Q06 MQ Mission 6:

(1) Purpose. To familiarize student with heavyweight aircraft characteristics, navigation, aerial photography, aircraft control at high altitude and use of aircraft navigation systems.

(2) Duration. Approximately 8 hours for U-2R/TR-1
Approximately 6 hours for U-2C

(3) Pressure Suit. Required.

(4) Crew. Solo.

(5) Requirements:

(a) Takeoff and turn on required equipment. IP specifically prebriefs on heavyweight takeoff and climb performance/techniques.

(b) Cruise climb on briefed route.

(c) One DR NAV or LN-33 navigation leg of 1.5 hours duration.

(d) Minimum of one hour of photographic flight line runs. Use "A" or IRIS configuration.

(e) Exercise systems, if available.

(f) Evasive maneuver (R/TR).

(g) Let down from maximum altitude to base altitude, autopilot off.

(h) Simulate high speed descent (220 knots maximum) to 10,000 feet and transition to a PAR or ILS approach.

(i) Full stop landing. If wind conditions permit, U-2C will use drag chute for this landing.

g. Q07 MQ Mission 7:

(1) Purpose. To familiarize student with night flying.

(2) Duration. Approximately 6 hours total with at least 3 hours of night for U-2R/TR-1.
Approximately 3 hours night for U-2C.

(3) Pressure Suit. Required.

(4) Crew. Solo.

(5) Requirements:

(a) Takeoff and turn on required equipment. Climb on briefed route to cruising altitude.

(b) One night DR NAV or LN-33 navigation leg.

(c) Operate Olympic Race equipment, if available.

(d) Penetration with PAR or ILS approach.

(e) Full stop landing.

(6) Fly a maximum altitude climb profile in the U-2R/TR-1.

h. Q08 MQ Mission 8:

(1) Purpose. To familiarize student with DR navigation, aerial photography, aircraft control at high altitude and use of aircraft navigation systems.

(2) Duration. Approximately 6 hours.

(3) Pressure Suit. Required.

(4) Crew. Solo.

(5) Requirements:

(a) Takeoff and turn on required equipment. Climb on briefed route to cruising altitude.

(b) One DR NAV leg of 1.5 hours duration.

(c) One hour minimum of photographic flight line runs without reference to the LN-33 or TACAN.

(d) Evasive maneuver (R/TR).

(e) Penetration with PAR or ILS approach.

(f) Full stop landing.

i. Q09 MQ Mission 9:

(1) Purpose. To accomplish mission-ready qualification check.

(2) Duration. Approximately 5 hours for U-2R/TR-1.
Approximately 3 hours for U-2C/CT.

(3) Pressure Suit. Required.

(4) Crew. Solo when no compatible trainer available.
Dual when compatible trainer available.

(5) Requirements:

(a) Takeoff and turn on required equipment. Climb on briefed route to cruising altitude.

(b) DR NAV leg of 30 minutes duration.

(c) One hour of photographic flight line runs, 30 minutes of which must be scorable.

(d) Full stop landing.

NOTE: Above accomplishments are minimum activity. All scheduled activity is considered a part of the qualification check.

j. Q10 MQ Mission 10:

(1) Purpose. To accomplish solo engine shutdown/restart if not accomplished on MQ 3.

(2) Duration. Approximately 3 hours.

(3) Pressure Suit. Requiired.

(4) Crew. Solo.

(5) Requirements:

(a) Mission profile will approximate IQ 3 profile.

(b) The only reason for flying this mission is to perform a solo engine shutdown/restart.

3-6. MQ TRAINING PROFILES:

CODE	ITEM	U-2C	U-2R/TR-1
A60	MQ Academics	1	1
Q01	MQ 1	1	1
Q02	MQ 2	1	1
Q03	MQ 3	1	1
Q04	MQ 4	1	1
Q05	MQ 5	1	1
Q06	MQ 6	1	1
Q07	MQ 7	1	1
Q08	MQ 8	1	1
Q09	MQ 9	1	1
Q10	MQ 10	A/R	A/R
Q11	MQ Extra	A/R	A/R

3-7. MQ MINIMUM TRAINING REQUIREMENTS:

CODE	ITEM	U-2C	U-2R/TR-1
V16	Mission Planning	6	6
V17	Aircraft Preflight	1	1
V32	Maximum Altitude Cruise Profile	0	4
V33	Maximum Range Cruise Profile	4	0
V36	LN-33 Training	0	2
V37	DR NAV Leg	3	3
V38	Evasive Maneuver	0	2
V39	Photographic Flight Lines	4.0	4.0
V43	Autopilot Off Descent	2	2
V46	Engine Shudown/Restart (Solo)	1	0
V50	Holding Pattern	1	1
V51	Penetration	1	1

CODE	ITEM	U-2C	U/2R/TR-1
V53	PAR	2	2
V54	ILS	2	2
V55	Non Precision Approach	1	1
V56	Missed Approach	1	1
V62	Touch-and-Go Landings	2	2
V63	No-Flap Landings	2	2
V67	Day Full Stop Landing	2	2
V68	Night Full Stop Landing	1	1
V71	SFO — Full Flaps	2	2
V72	SFO — No Flaps	2	2
V82	Control Day Takeoff	3	3
V83	Control High Flight	2	2
V84	Control Night Takeoff	1	1
V85	Control Day Landing	5	5
V86	Control Day Full Stop Landing	2	2
V87	Control Night Landing	2	2
V88	Control Day No-Flap	1	1

3-8. DIFFERENCE TRAINING:

a. Purpose. This section prescribes training requirements for MR pilots transitioning from the U-2C to the U-2R/TR-1 or from the U-2R/TR-1 to the U-2C.

b. Policy:

(1) The IQ and MQ mission outlines of chapter 2 and this chapter will be followed as prescribed by the profiles of paragraph 3-9.

(2) IQ 1 will be flown if a compatible trainer is available. IQ 6 will be substituted for IQ 1, as required, when a compatible trainer is not available.

(3) MQ sortie flying time may be reduced during difference training provided minimum prescribed activity is completed.

3-9. DIFFERENCE TRAINING PROFILES:

CODE	ITEM	R/TR to C	C to R/TR
A59	IQ Academics	1	1
A60	MQ Academics	1	1
K01	IQ 1	1	1
K06	IQ 6		A/R
K07	IQ 7	1	1
K09	IQ 9	1	1
K10	IQ 10 (60-4)	1	1
Q03	MQ 3	1	1
Q06	MQ 6	1	1
Q07	MQ 7	1	1
Q09	MQ 9 (60-4)	1	1
Q11	MQ Extra	A/R	A/R

3-10. MINIMUM DIFFERENCE TRAINING REQUIREMENTS:

CODE	ITEM	C to R/TR	R/TR to C
V16	Mission Planning	3	3
V17	Aircraft Preflight	3	3
V18	Checklist Procedures	6	6
V19	Start and Taxi	6	6
V22	Takeoff	6	6
V25	Standard Instrument Departure	3	3
V29	Flight Characteristics	1	1
V31	Cruise Climb	2	2
V36	LN-33 Training	2	0
V37	DR NAV Leg	1	2
V38	Evasive Maneuver	2	0
V39	Photographic Flight Lines	2.0	2.0
V41	Emergency Gear Extension	1	1
V43	Autopilot Off Descent	2	2
V51	Penetration	2	2
V53	PAR	2	2
V54	ILS	2	2
V55	Non Precision Approach	2	2
V56	Missed Approach	1	1
V60	Landing Pattern	4	4
V62	Touch-and-Go Landings	4	4
V63	No-Flap Landings	2	2
V64	Night Touch-and-Go Landings	1	1
V65	No-Voice Landing	1	1
V67	Day Full Stop Landing	5	5
V68	Night Full Stop Landing	1	1
V71	SFO — Full Flaps	2	2
V72	SFO — No Flaps	2	2
V82	Control Day Takeoff	1	1
V83	Control High Flight	1	1
V85	Control Day Landing	1	1
V86	Control Day Full Stop Landing	1	1
V88	Control Day No-Flap Landing	1	1

CHAPTER 4

CONTINUATION TRAINING (Phase III)

4-1. SCOPE:

a. General. The continuation training program is designed to provide training necessary to maintain a level of proficiency and currency that will enable pilots to carry out their assigned duties and mission. This chapter provides guidance and specifies the training and currency for pilots maintaining qualification in the U-2/TR-1 aircraft.

b. Objectives. The objectives of this chapter are to:

(1) Ensure units and pilots maintain the proficiency required to safely operate the aircraft and effectively perform assigned missions.

(2) Establish training and minimum sortie requirements to be accomplished by each pilot during a six month training period.

(3) Prescribe the procedures by which pilots delinquent in training requirements may regain currency.

4-2. CONCEPT OF TRAINING:

a. General. The continuation training program is based upon a required number and frequency of training events. The training program consists of command and unit directed requirements. The Wing Directed Events are established, as required.

b. Command Directed Training, Individual Requirements. Command Directed Events (CDE) are minimum requirements. These requirements are specific type activities for individual pilots and must be accomplished in order to maintain unit mission proficiency. Units must schedule sufficient sorties/activities to ensure all individual requirements are accomplished. The Wing Directed Training Program will be used as necessary to provide additional training.

c. Wing Directed Training. This program provides additional activity required to train for specialized procedures/tactics and compensate for individual differences or deficiencies. The Wing may require specific recurring events for all pilots.

d. Responsibilities:

(1) Unit commanders will ensure pilots receive training necessary to maintain the desired level of proficiency.

(2) Units will report training accomplishments in SACARMS. Reporting instructions are contained in SACR 50-370. Overseas units without this capability will track requirements manually and forward accomplishments to the 9SRW monthly for entry into SACARMS.

(3) Designation of Mission Ready Pilots. Crew categories and numbering procedures for U-2/TR-1 pilots are as follows:

(a) Select Crew. Pilots designated select by unit commander because they have a superior ability to perform the unit's mission. Commanders must be highly critical in designating select crews. Select crew status will normally be limited to standardization pilots and will not exceed 35% of assigned pilots. The prefix "S" is used to designate select status.

(b) Senior Crew. A pilot who possesses a high degree of experience and demonstrates a high level of professionalism and proficiency in performance of the unit's mission. The prefix "E" is used to designate senior status.

(c) Ready Crew. A pilot qualified to perform the unit mission. The prefix "R" is used to designate mission ready status.

(d) Nonmission Ready. A pilot that does not meet requirements for mission ready status. The prefix "N" is used to designate nonmission ready status.

(e) Staff. A pilot assigned to a staff position and maintaining basic proficiency in the U-2/TR-1.

(4) Individual Availability: Individual pilots are not available for training under the following conditions:

(a) Forty-five days prior to DOS, retirement or start of terminal leave.

(b) Forty-five days prior to PCS to different weapons system.

(c) During period of downgrade status.

(d) Days TDY, NFDS or on leave (Leave periods of less than 7 consecutive days will not be computed).

(5) Training Availability. Individual CDEs are determined by the number of days available. Unit DOT will compute availability for each pilot. When the cumulative total of days nonavailable changes the pilots months available IAW following chart, pilot CDEs will be reduced accordingly. Individual CDEs will be adjusted as soon as nonavailability period is scheduled. Units must consider future programmed periods of nonavailability for pilots when programming CDE completion rates. If programmed periods are subsequently cancelled, availability must be readjusted.

DAYS AVAILABLE	MONTHS AVAILABLE	DAYS NOT AVAILABLE
0- 30 days	0 months	150-180 days
31- 44 days	1 month	136-149 days
45- 74 days	2 months	106-135 days
75-104 days	3 months	76-105 days
105-134 days	4 months	46- 75 days
135-164 days	5 months	16- 45 days
165-180 days	6 months	0- 15 days

(6) Downgraded Crew Training Policy. The unit commander may declare a pilot NMR for lack of proficiency or other circumstances. In such cases, the pilot is no longer considered available for training under provisions of this chapter.

(7) New Aircraft.

(a) When units are activated or convert to new aircraft, training will be as directed by HQ SAC/DOT.

(b) Units scheduled for conversion to new aircraft or for inactivation are not relieved from compliance with this volume until advised by HQ SAC/DOT.

(8) NMR Policy. NMR accomplishments may not be converted to MR activity nor may mission ready credit be brought forward for training accomplished during IQ or MQ training.

(9) Training Policies. The following policies govern planning and execution of all training missions:

(a) Mission Planning. Missions must simulate operational conditions as closely as possible to obtain maximum benefit from each sortie. Unless otherwise specified, follow principles and procedures contained in appropriate flight manuals and other directives/operational requirements.

(b) Training may be accomplished on functional check flights, provided provisions of TO-1-1-300 are satisfied.

(c) MR pilots train IAW appropriate availability column. MR pilots gained during the training period will train under appropriate column which is determined as first day of the month following the month in which they are declared MR.

(10) Crediting of Training. Unless otherwise directed, all activity accomplished on any type mission (scored where applicable) is credited as mission ready requirements.

(a) Use suffixes as indicated in SACR 50-370 to identify and award credit to appropriate pilot.

(b) Activity accomplished while TDY at an operating location is not creditable toward mission ready requirements, however, this activity will be documented. Locally, reproduced forms may be used in lieu of CMARs to record this training.

4-3. CONTINUATION TRAINING REQUIREMENTS:

a. Basic Proficiency:

(1) Ground Training Requirements. U-2/TR-1 pilots must complete training requirements contained in Figure 4-1 and in AFR 60-1.

(2) Flying Training Requirements. Semi-annual flying requirements contained in Figure 4-2 to 4-4 apply to all pilots maintaining proficiency in the U-2/TR-1. Training and evaluation requirements are based on those items necessary to operate aircraft safely and to retain basic skills on a currency basis.

(3) Pilots who fail for two consecutive training periods to accomplish specified training applicable to their availability will be placed in supervised status, accomplish retraining as directed by unit commander and demonstrate proficiency in all basic items to an IP.

b. Mission-Ready. Mission-ready training requirements are designed to maintain U-2/TR-1 pilots at a state of proficiency that will enable them to perform the unit mission. These requirements apply to pilots maintaining tactical aircrew qualification.

(1) Ground Training: Pilots will accomplish training requirements contained in Figure 4-1. Policies, responsibilities and detailed requirements are contained in SACR 50-24, Volumes I and V.

(2) Flying Training Requirements:

(a) Sortie Requirements. U-2/TR-1 pilots must average the minimum U-2/TR-1/T-38 sorties specified in Figure 4-2, 4-3 and 4-4, as applicable, per month of availability.

(b) Specific Mission Requirements. Each MR pilot must accomplish requirements listed based on availability

for training. This includes activity accomplished on higher headquarters directed missions. CMARs will be completed for all flights to credit this activity.

NOTE: Not more than approximately one-third of the total six month column requirement for training items P02, P04, P06, P14 and P22 are creditable in any one month period. Training in excess does not negate the need to accomplish remaining requirements.

(c) The unit commander must determine if Category "A" pilots have accomplished sufficient activity to remain MR and/or current. The unit commander may direct additional training to bring pilot's proficiency to desired level.

(3) Staff Instructors. All U-2/TR-1 mission capable instructors must complete ground training requirements contained in Figure 4-1 and in AFR 60-1 for their applicable aircraft.

ITEM NUMBER	SHORT TITLE	MSN READY U-2R/TR-1 CURRENCY	MSN READY U-2C/CT CURRENCY	MSN CAPABLE & BASIC QUAL CURRENCY	NON-CONUS MSN READY STAFF
G01	LST-1 (T-38) if current	365	365	365	
G02	LST-2 (T-38) if current	365	365	365	
G07	EWO Study	180	N/A	N/A	
G08	UMB/EWO Certification	365	N/A	N/A	
G50	LST-1	365	365	365	365
G51	LST-2	365	365	365	365
G53	CWD-2	180	N/A	N/A	
G55	STD	180	N/A	N/A	
G56	CCPR	365	N/A	N/A	
G62	COM	365	N/A	N/A	
G63	ENP	180	180	180	180
G66	E&E-1	365	N/A	N/A	
G67	SRP	365	N/A	N/A	
~~G78~~ G81	SCT-1 (COMBAT) ~~(Arctic)~~	365	N/A	N/A	
~~G79~~ G82	SCT-2 (Water)	~~365~~ 730	N/A	N/A	
~~G80~~ G83	SCT-3 (GENERAL) ~~(Combat)~~	365	N/A	N/A	
~~*G81~~	~~SCT-4 (Desert)~~ SCT-1	A/D	N/A	N/A	
~~*G82~~	~~SCT-5 (Jungle)~~ SCT-2	A/D	N/A	N/A	
~~G83~~	~~SCT-6 (General)~~	N/A	365	365	365
G90	AIRC	365	365	365	
H35	EWP-4	365	N/A	N/A	
H43	E&E-2	365	N/A	N/A	
~~H53~~	~~E&E-3~~	365	N/A	N/A	

*As determined by the unit DOT.

FIGURE 4-1. U-2/TR-1 PILOT RECURRING ACADEMIC TRAINING REQUIREMENTS

ITEM	TITLE	MSN READY PRORATED RQMT						CURRENCY DAYS	MSN CAPABLE & BASIC QUAL PRORATED RQMT						CURRENCY DAYS
	MONTHS AVAIL	1	2	3	4	5	6		1	2	3	4	5	6	
I02	Inst Dep	0	0	1	1	2	2		0	0	1	1	2	2	
I04	Hold Pattern	0	0	1	1	2	2								
I06	Penetration	0	0	1	2	2	3		0	0	1	1	2	2	
I08	Inst Approach							45							45
I10	PAR	0	1	2	2	3	3		0	1	2	2	3	3	
I12	ILS	0	1	2	2	3	3		0	1	2	2	3	3	
I14	Non Precision	0	1	1	2	2	3		0	1	1	2	2	3	
I16	Missed Approach	0	1	1	2	2	3		0	1	1	2	2	3	
P02	Sortie (CAT A)	4	8	12	16	20	24	45							
P02	Sortie (CAT B)	3	6	9	12	15	18	45	2	4	6	8	10	12	45
P04	Hi Sortie (CAT A)	2	4	6	8	10	12								
P04	Hi Sortie (CAT B)	1	2	3	4	5	6								
P06	Lo Sortie	2	4	6	8	10	12	60							
P08	Night Sortie	0	0	1	1	2	2								
P10	Takeoff	3	6	9	12	15	18	45	2	4	6	8	10	12	45
P14	Phot Flt Line	1.0	1.0	1.5	2.0	2.5	3.0	60							
P18	Evasive Actions (R/TR only)	1	1	1	2	2	3								
P20	Hi Auto-Pilot Off	1	1	1	1	1	1								
P22	Land Total	3	6	9	12	15	18	45	2	4	6	8	10	12	45
P24	Land Night	0	0	1	1	2	2		0	0	1	1	2	2	
P26	Land T+G (IP)							45							45
P27	Land T+G Rear *U-2CT/TR-1B IP)							45							45
P30	No Flap Landing	1	1	1	2	2	3								
P32	No Voice Landing	1	2	3	4	5	6								
P35	SFO	1	2	3	4	5	6	90	1	2	3	4	5	6	90

FIGURE 4-2. U-2/TR-1 PILOT FLYING TRAINING RECURRING REQUIREMENTS

ITEM	TITLE	MSN READY PRORATED REQ						CURRENCY DAYS	MSN CAPABLE & BASIC QUAL PRORATED REQ						CURRENCY DAYS
	MONTHS AVAIL	1	2	3	4	5	6		1	2	3	4	5	6	
I01	Inst Hrs								1.5	3.2	4.9	6.6	8.3	10.0	
I05	Pre Appr								2	2	4	4	6	6	
I13	PAR								1	1	2	2	3	3	
I14	ILS								1	1	2	2	3	3	
I19	Non Prec Appr								2	2	4	4	6	6	
P03	Night Sortie								1	1	2	2	3	3	
P04	Night Hours								.5	1.2	1.9	2.6	3.3	4.0	
P14	Land Full Stop								1	1	1	2	2	2	
P15	Land Total							45	2	4	6	8	10	12	45
P17	Land Night								1	1	1	2	2	2	
P35	Rear Sortie	2	4	6	8	10	12								
P51	Sortie (U-2CT/TR-1B IP)	4	8	12	16	20	24	45	4	8	12	16	20	24	45
P51	Sortie (All others)	6	12	18	24	30	36	45	6	12	18	24	30	36	45
P70	Pilot Prof. Sort.	0	1	2	3	4	5								
P97	Land T&G							45							

NOTE: Annual instrument evaluations and two monthly rear seat sorties in the T-38 will be accomplished under a hood.

FIGURE 4-3. T-38 (COMPANION TRAINER) PILOT FLYING TRAINING RECURRING REQUIREMENTS

ITEM	TITLE	NONCONUS MSN READY STAFF						CURRENCY DAYS
	MONTHS AVAIL	1	2	3	4	5	6	45
I02	Inst Dep	0	0	1	1	2	2	
I06	Penetration	0	0	0	0	1	1	
I08	Inst Approach							45
I10	PAR	0	1	2	2	3	3	
I12	ILS	0	1	2	2	3	3	
I14	Non Precision	0	1	1	2	2	3	
I16	Missed Approach	0	0	1	1	2	2	
P02	Sortie	2	4	6	8	10	12	45
P04	Hi Sortie	1	2	3	4	5	6	
P06	Lo Sortie	1	2	3	4	5	6	
P08	Night Sortie	0	0	0	0	1	1	
P10	Takeoff	1	4	5	8	9	12	45
P18	Evasive Action	0	0	0	1	1	1	
P20	Hi Autopilot Off	0	0	0	1	1	1	
P22	Land Total	1	4	5	8	9	12	45
P24	Land Night	0	0	0	0	1	1	
P30	No Flap Landing	0	0	0	0	1	1	
P32	No Voice Landing	0	0	1	1	2	2	
P35	SFO	0	0	1	1	2	2	90

FIGURE 4-4. U-2R/TR-1 NONCONUS PILOT FLYING TRAINING RECURRING REQUIREMENTS (MISSION-READY STAFF)

4-4. CURRENCY:

The following training items must be accomplished within the specified time period by all pilots. Pilots who fail to accomplish this minimum activity within specified time periods will be considered noncurrent and placed in supervised status until currency/qualification is regained.

CODE	TRAINING ITEM	NUMBER/FREQUENCY (DAYS)
P02	Sortie	1/45
P10	Takeoff	1/45
P22	Landing	1/45
P26	Tourch-and-go Landing (1P only)	1.45
I08	Precision/Nonprecision Approach	1/45

4-5. PREDEPLOYMENT/OVERSEAS TRAINING:

a. A heavyweight takeoff and long duration high altitude flight is required prior to a pilot's first operational TDY deployment.

b. Pilots must acquire 100 hours total in U-2/TR-1 aircraft prior to overseas operational TDY deployment to 9 SRW detachments.

c. Pilots must accomplish at least one high sortie (P04) within 30 days of a scheduled TDY deployment.

d. Pilots will accomplish a mandatory U-2 local area orientation flight at each detachment prior to operational flying. Pilots returning to a detachment for subsequent tours will also accomplish an orientation flight if one year has elapsed between tours at that detachment.

4-6. ACCOMPLISHING CONTINUATION TRAINING:

a. Photographic Activity. Accomplish all photographic activity at an altitude of 55,000 feet or above, except as directed by higher headquarters. The following rules apply for crediting photographic activity. Photo activity directed by higher headquarters is creditable toward currency in that item.

(1) Photographic Flight Line (PFL) (P14):

(a) Coverage of defined run must be obtained.

(b) Flightlines will be designed to simulate operational conditions.

(c) Deviation from briefed flightlines should not exceed a 6 NM corridor (3 NM either side) for U-2R/TR-1 and a 10 NM corridor (5 NM either side) for U-2C. All straight line portions of a run will be scored.

(d) PFL training is logged in tenths of hours. A minimum of two tenths of an hour must be accomplished to be creditable.

(2) Evaluation Rules. Pilots are not charged with rejections under the following conditions:

(a) When cloud cover is 4/10 or more for a distance of 20 NM before or during PFL and the photographic run is not creditable.

(b) When the camera malfunctions.

(c) When the recording cannot be evaluated due to improper processing.

(3) Photographic Log. Complete flight log and inflight blocks of the chart in a legible manner. Rejected photography which cannot be evaluated due to incomplete data is charged against pilot.

(4) Reporting. The reconnaissance technical facility or evaluating agency must submit a complete photographic evaluation record on appropriate form to unit DO. It must include:

(a) Crew number.

(b) Pilot's name.

(c) Quality and type of activity flown/accepted/rejected.

(d) Cause of rejection.

(e) Pertinent remarks.

b. Evasive Action Maneuvers (P18). Accomplish IAW SACR 55-21, volume VII. Use a simulated threat to initiate maneuver.

c. High Altitude Flight, Autopilot Off (P20). Accomplish this training by descending from cruise-climb altitude to FL 600 with the autopilot disengaged. This training may be accomplished in conjunction with any other compatible training item.

d. Maximum Altitude Cruise (U-2R/TR-1). Fly all day and night high altitude training missions using maximum altitude cruise procedures except when mission accomplishment requires maximum range cruise procedures.

e. Training items coded with "I" prefixes. Intended, for aircraft familiarity and will be accomplished only under visual flight rules or in actual weather conditions, i.e. do not accomplish under hooded conditions except in the T-38 or two seat trainer aircraft.

f. Pilot Proficiency Mission (T-38) (P70):

(1) Mission is designed to provide instrument training for the pilot. A minimum of 1.0 hour will be scheduled for each pilot to accomplish instrument requirements as specified in this regulation.

(2) Items not accomplished due to reasons beyond control of pilot need not be acomplished on subsequent sorties to receive credit for P70.

g. Credit. Will be taken each time a numbered crew flies a sortie. P08 can be dual credited with P02 or P06 items.

4-7. REQUALIFICATION TRAINING:

a. Purpose. To prescribe minimum training required to requalify pilots in the U-2/TR-1 aircraft.

b. Policy:

(1) The amount of training to requalify will depend on how long a pilot has been noncurrent.

(2) Noncurrent periods begin the day a pilot goes noncurrent in a particular currency item.

(3) Requalification categories (differing by noncurrent period) are as follows:

(a) Category I — under two months.

(b) Category II — two to six months.

(c) Category III — over six months.

(4) Category II and III requalification programs will include IQ 1 if a compatible trainer is available. IQ 6 will be substituted for IQ 1, as required, when a compatible trainer is not available.

(5) MQ sortie flying time may be reduced during requalification training provided minimum prescribed activity is completed.

(6) The IQ and MQ mission outline of chapters 2 and 3 will be followed as prescribed by the profiles of paragraph 4-7.

(7) Pogo retention, taxi familiarization, DR NAV or engine shutdown/restart need not be accomplished for any requalification training program.

(8) Ground training item outlines, OPRs and objectives for requalification programs are as listed in chapters 2 and 3.

c. Academic Training:

(1) Category I — as directed by the unit DO.

(2) Item Description (A62 Item Outline).

SUBJECT	CAT II	CAT III
Pressure Suit Refresher	2.0	4.0
Flight Manual Review	4.0	8.0
Cockpit Time	1.0	1.0
LN-33 System Refresher (R/TR only)	1.0	1.0
LST 1 and 2	A/R	A/R
SACR 60-4 Exams	4.0	4.0

d. Flying Training. The training items of paragraph 3-10 should be used as guides in administering requalification programs. However, demonstration of proficiency rather than "times items accomplished" applies. Instructors must document demonstration of proficiency as it occurs.

4-8. REQUALIFICATION TRAINING PROFILES:

a. Category I. As directed by the unit DO. Demonstration of proficiency in noncurrent activity will be documented by the IP in "Remarks" section of the CMAR.

b. Category II and III:

CODE	ITEM	CAT II	CAT III
A62	Requal Academics	1	1
K01	IQ 1	1	1
K06	IQ 6	A/R	A/R
K07	IQ 7	0	1
K09	IQ 9	1	1
K10	IQ 10	A/R	A/R
Q03	MQ 3	1	1
Q06	MQ 6	1	1
Q09	MQ 9 (60-4)	1	1
Q11	MQ Extra	A/R	A/R

NOTE: Staff pilots not requalifying for high flight will not fly MQ missions. They will accomplish an IQ 10 qualification check.

CHAPTER 5

INSTRUCTOR UPGRADE TRAINING

5-1. SCOPE:

a. General. This chapter establishes minimum qualifications for U-2/TR-1 instructor pilots. The instructor upgrade program is designed to ensure instruction by best qualified personnel, standardize instructor qualifications and establish foundations for a safe flying training program.

b. Responsibilities. The proper instruction of students establishes basic foundations for a qualified pilot. Commanders must ensure compliance with provisions and intent of this chapter.

(1) Chief, Training Division. Ensures adequate flight time to provide for continuity of training and completion of the program. Mission Development Branch will schedule specific training requirements. Applicable staff agencies will coordinate with the Mission Development Branch to assure maximum effectiveness of training.

(2) Commander, Training Squadron:

(a) Establishes flight and ground training phases through coordination with Mission Development Branch.

(b) Provides individual training folders for documentation of training IAW chapter 1.

(c) Periodically reviews and updates training requirements herein to ensure adequacy of upgrade program.

(3) Chief, Standardization Division. Coordinates and monitors procedures used during training to ensure compliance with current flight manuals and existing directives.

c. Policy. The student IP will be trained to proficiency in all instructional activities.

d. Academic Training. The student IP will receive academic training IAW SACM 51-71, attachment 2, and paragraph 5-3a of this regulation. All academic training requirements will be accomplished prior to flight for U-2CT/TR-1B student IPs.

e. Instructor Upgrade Panel. Units will form an Instructor Upgrade Panel. This panel may be held simultaneously with the CCCU meeting but will convene bimonthly, as a minimum, to perform the following functions:

(1) Review appropriate training records of all potential IPs. The following areas will be evaluated:

(a) Individual proficiency.

(b) Experience level.

(c) Instructor potential.

(2) Make appropriate recommendations to unit commander regarding potential candidates.

(3) Review progress of student IPs in training.

(4) Provide status report and make appropriate recommendations for improving IP upgrade program.

(5) The unit DOT will maintain the minutes and records of these panels. A copy will be forwarded to the parent NAF/DOR. The Instructor Upgrade Panel will be composed of:

(a) Wing Commander or Vice Commander.

(b) Deputy Commander for Operations.

(c) Chief, Operations and Training Division.

(d) Chief, Mission Development Branch.

(e) Chief, Flight Management Branch.

(f) Chief, Standardization Division.

(g) Commander, Training Squadron.

(h) Tactical Squadron Commanders.

5-2. PREREQUISITES:

a. Selection. In selecting potential IPs, units must consider experience, judgment, ability to instruct, flying skill and technical knowledge. After selection of IPs, the monitoring of their training will be the responsibility of Replacement Training Branch.

b. Time Requirements. The minimum flying time requirements for instructor upgrade are:

Total Pilot	1500 Hrs
Total U-1/TR-1	150 Hrs

c. Formal Courses. Successful completion of one of the following formal courses is mandatory prior to performing IP duties.

(1) Central Flight Instructor Course (CFIC).

(2) Instructor Pilot Instrument School (IPIS).

(3) Pilot Instructor Course (AFM 50-5).

5-3. ACADEMIC TRAINING (ITEM A61):

a. Academic Training. The student IP's instructor should discuss objectives for each course by giving a brief overview. Course block times are presented as a scheduling guide only. Actual training time will be as required to adequately cover all required course material.

NOTE: These requirements may be waived by the unit DO if student IP has attended CFIC.

SUBJECT	
The Flight Instructor	1 Hr
Principles of Instruction	2 Hrs
Student-Instructor Relationships	4 Hrs
Evaluation and Student Training Records	2 Hrs
Regulations and Manuals for the Flight Instructor	4 Hrs
Local Briefing Guides	3 Hrs
Flight Instruments	3 Hrs

NOTE: Outlines for above subjects are contained in SACM 51-71, attachment 2.

b. Student Briefing and Critique. The student IP will perform the following training under supervision of an IP:

(1) Review entire Flight Manual and demonstrate knowledge of aircraft systems.

(2) Brief for a dual IQ-1 or solo IQ-6, as applicable.

(3) Critique a taped mission selected from tape library.

c. U-2CT/TR-1B Differences: (2 Hours)

(1) Description.

(2) Aircraft Systems.

(3) Rear Seat Controls.

(4) Emergency Procedures.

d. Cockpit Time (1 Hour).

5-4. FLYING TRAINING:

a. Purpose:

(1) Increase student IP proficiency to a level where all flight maneuvers can be demonstrated with precision and correct techniques.

(2) Provide student IP the opportunity to practice and become proficient in instructing all phases of flight.

b. Policy:

(1) Items specified for training will be completed on a proficiency basis.

(2) Before becoming an IP in a given model U-2/TR-1, a pilot must first be MR in that model.

(3) If student IP is to be a U-2CT/TR-1B IP, a minimum of four sorties will be flown with the student IP in the rear seat. The fourth or last sortie will be an inflight instructor check.

c. Mission Outlines:

(10 Q21 IP Mission 1 (U-2CT/TR-1B):

(a) Purpose. To provide student IP familiarization and experience in rear seat duties as an IP.

(b) Duration. Approximately 2.0 hours.

(c) Pressure Suit. Not required.

(d) Requirements:

Rear seat solo checklist under IP supervision.

Special checklist items on walk around inspection.

Engine start.

Normal pre-taxi procedures.

Taxi practice.

Takeoff and Climb. Student IP will perform takeoff, drop pogos and climb at 160 knots.

Flight Characteristics. Approach to stalls at 0°, 15°, 25° and full flaps.

Normal Inflight Procedures. TACAN holding and low approach.

Descent.

Emergency Procedures. One full flap SFO and one no-flap SFO.

Landings.

—Three touch-and-go landings.

—Full flap and no-flap landings.

—Full stop landing.

(2) Q22 IP Mission 2 (U-2CT/TR-1B):

(a) Purpose. High/low flight for high altitude, instrument, emergency procedure and SFO practice.

(b) Duration. Approximately 2.5 hours.

(c) Pressure Suit. Required.

(d) Requirements:

Engine start.

Normal pre-taxi procedures.

Taxi by student IP.

Takeoff and Climb. Drop pogos and climb to above FL600.

Normal Inflight Procedures.

—ATC procedures.

—Cruise climb to include throttle technique and airspeed schedule.

Autopilot verbal explanation to include turns on turn knob and heading select feature, Mach Hold engagement and disengagement.

—Manual flight will include practice turns using shallow bank angles and descent to FL500.

—Demonstration of engine shutdown/restart with verbal instruction.

Descent. Penetration and non precision low approach.

One PAR or ILS.

Emergency Procedures. One full flap SFO and one no-flap SFO.

Landings.

—One normal touch-and-go.

—One no-flap touch-and-go.

—One full stop.

(3) Q23 IP Mission 3 (U-2CT/TR-1B):

(a) Purpose. To familiarize student IP with night traffic patterns and landings. This sortie should be scheduled for takeoff prior to sunset for additional daylight training.

(b) Duration. Approximately 2.5 hours.

(c) Pressure Suit. Not required.

(d) Requirements:

Engine start.

Normal pre-taxi procedures.

Takeoff and Climb. Drop pogos and level off at FL200.

Normal Inflight Procedures. TACAN holding and low approach.

Landings.

—Three night touch-and-go landings.

—One night full stop.

(4) Q24 IP Mission 4 (U-2CT/TR-1B).

The purpose of this mission is to conduct an IP qualification check using high/low profile of IP Mission 2.

NOTE: Mobile training and an evaluation of IP mobile duties IAW SACR 60-4 is required for all U-2/TR-1 IPs.

5-5. IP CURRENCY/PROFICIENCY:

a. Currency:

(1) Instructor pilots must acomplish a touch-and-go landing each 45 days. Those failing to meet this requirement will not supervise, instruct or evaluate touch-and-go landings until requalified.

(2) U-2CT/TR-1B IPs must accomplish one touch-and-go in the rear seat each 45 days. Those failing to meet this requirement will not instruct touch-and-go landings from the rear seat until requalified.

(3) All IPs must perform active inflight instructor duties on a frequent basis to ensure maintenance of a high level of currency/proficiency. As a minimum, each IP will perform IP duties once each 60 days for currency. Any IP who loses currency will be required to satisfactorily demonstrate instructor skills to a current IP prior to resuming IP duties. U-2C, U-2R and TR-1A may satisfy this requirement through mobile activities.

b. Loss of Currency:

(1) Loss of IP currency in the U-2CT/TR-1B does not preclude a pilot from performing normal inflight pilot duties as long as basic currency is maintained.

(2) Requalification:

(a) Requalification must be administered inflight by a designated IP or FE as applicable to the time since currency expired. Accomplish and document flight and landing requalification requirements IAW chapter 4.

(b) Requalification need only be accomplished in those areas/maneuvers in which the IP is noncurrent.

c. Repeat Noncurrency. IPs who fail to meet currency requirements or who fail repeatedly to meet requirements of this paragraph will be reviewed by unit commander to determine if they should remain on IP status.

CHAPTER 6
PILOT AND AIRCRAFT LIMITATIONS

6-1. SCOPE.

This chapter prescribes limitations for U-2/TR-1 pilots and aircraft.

6-2. TERMS:

a. Visual Meterological Conditions (VMC). The term, as used in this regulation, is defined as weather conditions which permit operation clear of all clouds and provide visual contact with the ground. It in no way refers to those weather minimums required to operate under VFR clearance as defined in AFR 60-16.

b. Clear of Clouds. The term refers to weather conditions which permit aircraft operation with some visual attitude reference source outside the cockpit such as the ground or cloud layers. Operation on top of clouds or between cloud layers satisfies this requirement.

c. Instructor Pilot Supervision. Defined as an IP qualified in the aircraft and applicable maneuver, occupying one of the pilot's seats with immediate access to controls while the maneuver is being performed or located in mobile control in two-way radio contact with the pilot performing maneuver.

6-3. RESTRICTIONS:

a. Policy. Emergency procedures will not be practiced in flight under the following conditions:

(1) During hours of darkness (sunset to sunrise) or instrument flight conditions.

(2) When runway contact is involved and runway condition is wet, icy, or snow covered.

NOTE 1: Immediately prior to all emergency procedures practice, the pilot must alert the other pilot (U-2CT/TR-1B).

NOTE 2: Compound emergencies will not be practiced during critical phases of flight unless specifically required for IP upgrade training or evaluation.

b. Simulated Flameout (SFO) Landing. Do not accomplish actual engine shutdown.

NOTE 1: No-flap landings are not considered simulated emergency procedures.

NOTE 2: Minimum run landing approaches with normal braking after touchdown are not considered simulated emergency procedures.

c. Simulated Flameout Approaches. Accomplish simulated flameout approaches IAW instructions outlined in the flight manual.

d. Maximum Fuel. Do not accomplish landing for pilot proficiency or transition training with fuel on board in excess of the following:

(1) U-2C — 400 gallons.

(2) U-2CT — 600 gallons.

(3) U-2R/TR-1 — 600 gallons.

e. Minimum Fuel. Fuel reserve requirements of AFR 60-16 apply except that U-2/TR-1 final landings will be accomplished with 125 gallons of useable fuel. Safety-of-flight considerations, emergencies, etc., may necessitate making the final landing with less fuel than specified above.

f. Weather Minimums. Weather minimums contained in AFR 60-16 for destination and alternate apply to all peacetime operations.

g. Engine shutdown/restart training. Will be accomplished only in VMC.

h. Stalls and Flight Characteristics. Do not accomplish practice of stalls and flight characteristics below 10,000 feet above the top of an overcast. Demonstration of stalls must be discontinued upon initial stall warning and must not be entered in nose high altitudes.

6-4. GEAR CHECK:

All pilots must acknowledge base gear check or prelanding check transmitted by control tower or control agency and verify gear down and locked condition.

6-5. PERFORMANCE PLANNING CRITERIA:

a. Performance planning criteria will be based upon minimum runway required (not to exceed runway available minus applicable flight manual line-up distance) or climb out capability after takeoff, whichever is most critical, as computed IAW the flight manual.

b. A minimum of 1,000 feet overrun must be available in addition to the minimum required runway. When 1,000 feet of overrun is not available, a portion of the runway must be reserved to satisfy the overrun requirement. Runway

available for takeoff planning must be actual runway length less any portion of runway used to satisfy overrun requirements at liftoff end of runway.

6-6. TOUCH-AND-GO LANDINGS.

a. Touch-and-go landings are authorized in the U-2/TR-1 for training and instructor/flight evaluation proficiency and currency.

b. Touch-and-go landings are authorized only under the following conditions:

(1) Flight manual restrictions/procedures apply.

(2) Only IPs qualified IAW SACR 60-4 and this regulation will supervise touch-and-go landings. An IP, current in touch-and-go landings, may update his/her currency without IP supervision.

(3) Use a runway of sufficient width and length to permit a safe, normal full stop landing without drag chute, if applicable. Make actual touchdown in first third of runway at a point and speed which would enable a safe, full stop landing on remaining runway. Initiate a go-around if this is not possible.

(4) Do not use icy or snow covered runways.

(5) Accomplish IAW flight duty limitations of AFR 60-1/SAC Sup 1.

c. Supervision of Touch-and-Go Landings:

(1) An IP will be in radio contact with pilot concerned and supervise landings using established mobile procedures.

(2) IPs will brief pilot being supervised on the following items prior to supervising touch-and-go landings:

(a) Flight Manual procedures.

(b) Importance of smooth application of power and of stabilizing power before advancing throttle.

(c) Compressor stalls, including proper preventive action, recognitions, and corrective action.

(d) Emergency jettisioning of drag chute.

(e) Proper use of speedbrakes, flaps, and trim.

d. Touch-and-Go Limitations:

(1) Maximum crosswind component — 10 knots.

(2) Maximum normal land fuel — U-2C 400 gallons, U-2R/CT 600 gallons, TR-1 600 gallons.

(3) Maximum no-flap land fuel (all types) — 400 gallons.

(4) Final landing fuel (on ground) — 125 gallons.

CHAPTER 7

SENIOR STAFF/DV ORIENTATION FLIGHTS

7-1. SCOPE.

This chapter outlines academic and egress training necessary for designated senior staff/DVs who have a specific requirement for U-2/TR-1 system familiarity.

7-2. POLICY.

a. Course Duration. Minimum orientation course will be one half day.

b. Participation:

(1) Orientation flights for SAC personnel will be limited to appropriate commanders and officials approved by CINCSAC.

(2) Other USAF/DOD/Government Agencies. Orientation flights will be limited to individuals who must possess first hand knowledge of the U-2/TR-1 program as approved by CINCSAC or CSAF.

(3) 9SRW personnel who require first hand knowledge of the U-2/TR-1 program may receive orientation flights with approval of the 9SRW/CC.

(4) HQ SAC/DOR will be the single point of contact for processing and coordinating U-2/TR-1 orientation flights for personnel outside the 9SRW.

c. Safety. Flight safety is of paramount importance. DVs participating in orientation flights will possess an aeronautical background.

d. Limitation of Flight Scheduling. U-2CT/TR-1B training aircraft are available on a limited use basis. Orientation flights will not exceed more than one per quarter.

7-3. RESPONSIBILITY:

The unit DO is responsible for assigning highly qualified IPs to fly the mission and conduct required aircraft system briefings/egress training. Individuals must accomplish activity outlined below prior to flight and will forward, on request, measurements necessary for fitting a pressure suit.

a. U-2 Orientation Briefing. 30 minutes.

b. Physiological Orientation:

(1) High Altitude Flight. High altitude physiology, pressure suit fit, egress procedures and an altitude chamber pressure suit flight — 2.5 hours.

(2) Low Altitude Flight. Low altitude physiology and egress procedures — 1 hour.

c. Mission Briefing. 2 hours.

d. U-2 Aircraft Procedures and Cockpit Familiarization. 1 hour.

NOTE: The same IP will be assigned for ground orientation and flight.

R. H. ELLIS
General USAF
Commander in Chief

GERALD N. GUNTER, Colonel, USAF
Director of Administration

SUMMARY OF CHANGES

This regulation contains major revisions to mission outlines and pilot/staff recurring academic training. This regulation should be read in its entirety before attempting to comply with directives contained herein.

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