

C-20 T&R MANUAL

CHAPTER 1

C-20 PILOT

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*** * N O T E * ***

Aircrew coordination will be briefed for all flights and aircrew positions.

C-20 T&R MANUAL

CHAPTER 1

C-20 PILOT

100. POI FOR BASIC, TRANSITION, CONVERSION, AND REFRESHER PILOT

1. Prerequisite. A pilot must have a minimum of 1000 hours total pilot time to be designated as a C-20 Transport Aircraft Commander and a minimum of 500 hours total pilot time to be designated as a C-20 Transport Second Pilot.

<u>WEEKS</u>	<u>COURSE/PHASE</u>	<u>ACTIVITY</u>
3	Initial Ground School/Flight Simulator	Contract Aircrew Training (CACT)
1	Ground School Preflight Procedures	MCAF/VR-51
8	Flight Training	MCAF/VR-51

110. GROUND TRAINING COURSES OF INSTRUCTION

<u>COURSE</u>	<u>ACTIVITY</u>
Cockpit/Simulator Instruction	CACT
Preflight Procedures	MCAF/VR-51

111. SQUADRON LEVEL TRAINING

Orientation
 Local Course Rules
 Combined Exam
 Emergency Egress
 Preflight Inspection
 Cockpit Familiarization and Crew Coordination
 Start/Taxi/Shutdown Procedures
 Postflight Inspection
 Systems Brief
 International/Trans Oceanic Exam
 NATOPS Open and Closed Book Examinations

112. FLIGHT SIMULATOR TRAINING

<u>STAGE</u>	<u>FLIGHTS</u>	<u>HOURS</u>	<u>PERCENT</u>
Familiarization	7	28.0	25.0

120. FLIGHT TRAINING FOR BASIC, TRANSITION, CONVERSION, AND REFRESHER PILOT

1. Mission Capable Training

<u>STAGE</u>	<u>FLIGHTS</u>	<u>HOURS</u>	<u>PERCENT</u>
Basic Qualification	-	-	25.0
Familiarization and Instruments	2	4.0	18.0
Night Familiarization	1	2.0	6.0
Copilot Familiarization	2	4.0	6.0
T3P Check	1	2.0	5.0
Total for Phase	6	12.0	60.0

2. Mission Ready Training

<u>STAGE</u>	<u>FLIGHTS</u>	<u>HOURS</u>	<u>PERCENT</u>
Copilot Review	5	10.0	10.0
T2P Check	<u>1</u>	<u>2.0</u>	<u>5.0</u>
Total for Phase	6	12.0	15.0
Accumulation	12	24.0	75.0

3. Mission Qualification Training

<u>STAGE</u>	<u>FLIGHTS</u>	<u>HOURS</u>	<u>PERCENT</u>
TAC Familiarization	3	6.0	10.0
Maintenance Check Flight	1	2.0	5.0
TAC Qualification flight	<u>1</u>	<u>2.0</u>	<u>5.0</u>
Total for Phase	5	10.0	20.0
Accumulation	17	34.0	95.0

4. Full-Mission Qualification Training

<u>STAGE</u>	<u>FLIGHTS</u>	<u>HOURS</u>	<u>PERCENT</u>
International/Over Water TAC check	<u>1</u>	<u>12.0</u>	<u>5.0</u>
Total for Phase	1	12.0	5.0
Total Accumulation	18	46.0	100.0

121. FLIGHT TRAINING FOR INSTRUCTOR PILOTS

<u>STAGE</u>	<u>FLIGHTS</u>	<u>HOURS</u>
Instructor Under Training Requirements, Qualifications, and Designations	4	8.0
IUT Check flight	<u>1</u>	<u>2.0</u>
Total	5	10.0

130. SIMULATOR TRAINING

1. Purpose. To familiarize all pilots with C-20G normal cockpit procedures, crew coordination, systems operation and limitations, emergency procedures and to introduce instrument flight procedures.

2. General

a. Aircrew coordination shall always be stressed in training all pilots.

b. Pilots will take turns flying two hours in the left seat as Pilot in Command and two hours in the right seat as Co-Pilot for each simulator flight session.

3. Simulator Training. (7 Periods, 28.0 Hours).

SFAM/INST-100 4.0 T,C,R 2F3

Goal. Simulator configuration, characteristics and initial familiarization.

Requirement. Perform and identify appropriate level of automation through Mode awareness and intervention techniques. Accomplish required preflight planning/conduct brief and debrief. Perform aircraft normal procedures where applicable.

Perform SPZ-8000 tasks to include: Position initialization, build and store flight plan, performance initialization, direct to a fix (intercept course), hold at a fix, exit, resume, and delete, arrival and landing performance initialization. Perform aircraft normal takeoff procedures with autothrottles (balanced and un-balanced field length). Perform normal area departure procedures. Perform steep turn flight maneuvers. Perform approach to stall/stall recovery (clean, approach, and landing configurations). Perform unusual attitudes and recovery maneuvers (demo only). Perform non-precision approach procedures (arrival, assigned radials, missed approach, and holding). Perform precision approach procedures (area arrival, assigned radials, missed approach, normal landing). Perform abnormal/emergency procedures for in-flight powerplant shutdown, immediate airstart (Segment 1), in-flight powerplant shutdown, normal airstart (Segment 2). Perform normal landing operations. Perform after landing procedures.

SFAM/INST-101 4.0 T,C,R 2F3

Goal. Simulator configuration, characteristics and initial familiarization.

Requirement. Same as SFAM/INST-100

SFAM/INST-102 4.0 T,C,R 2F3

Goal. Introduce emergency procedures.

Requirement. Perform and identify appropriate level of automation through Mode awareness and intervention techniques. Accomplish required preflight planning/conduct brief and debrief. Perform aircraft normal procedures where applicable. Perform SPZ-8000 tasks to include: Position initialization build and store a flight plan, performance initialization, direct to a fix (intercept course), hold at a fix, exit, resume, and delete. Perform takeoff procedures: Balanced and unbalanced field lengths, crosswind, instrument takeoff and departure. Windshear on takeoff. Perform holding. Perform normal and missed approach procedures to include VOR and NDB. Perform abnormal/emergency procedures to include: Electrical (BUS faults), Converter Fail, Dual Converter Fail, Abex operation. Arrival and landing performance initialization. Windshear on approach. Perform landing operations to include: Crosswind, rejected landing to a normal missed approach.

SFAM/INST-103 4.0 T,C,R 2F3

Goal. Abnormal/Emergency operations procedures.

Requirement. Perform and identify appropriate level of automation through Mode awareness and intervention techniques. Accomplish required preflight planning/conduct brief and debrief. Perform SPZ-8000 tasks to include: Position initialization, IRS align fault, build and store a flight plan, performance initialization, track FMS course, direct to a fix (intercept course), program holding, present position holding, exit, resume, and delete, single engine performance, performance planning. Perform takeoff procedures: rejected

(aborted) takeoff, maximum weight takeoff with engine failure after V1. Perform area departure. Perform holding when applicable. Perform CAT I ILS approach (hand flown single engine to landing). Perform abnormal/emergency procedures to include: Engine FLT Loop Alert, Engine Fire on Ground, One engine Go-Around, Approach Aid Fail. Arrival and landing performance initialization. Perform landing operations to include: Single engine landing from a precision approach. Shutdown checklist.

SFAM/INST-104 4.0 T,C,R 2F3

Goal. Abnormal/Emergency operations procedures.

Requirement. Perform and identify appropriate level of automation through Mode awareness and intervention techniques. Accomplish required preflight planning/conduct brief and debrief. Perform SPZ-8000 tasks, to include: Position initialization, build and store flight plan, performance initialization, track FMS Course, direct to a fix (intercept course), performance planning. Perform takeoff procedures: Instrument takeoff, crosswind takeoff. Perform area departure. Perform approaches: Localizer only (GS out), VOR approach. Perform missed approach (autothrottles engaged). Perform abnormal/emergency procedures to include: combined hydraulic failure (pump failure), yaw damper failure, thrust reverser unlock, flap alternate operation, steer-by-wire fail, landing gear malfunction, flap control circuit breaker, anti-skid fail, brake pedal fail, blown tire. Arrival and landing performance initialization. Perform landing operations from circling approach.

SFAM/INST-105 4.0 T,C,R 2F3

Goal. Abnormal/Emergency operations procedures.

Requirement. Perform and identify appropriate level of automation through mode awareness and intervention techniques. Accomplish required preflight planning/conduct brief and debrief. Perform SPZ-8000 tasks to include: position initialization, build and store flight plan, performance initialization, track FMS course, direct to a fix (intercept course), program holding, present position holding, exit, resume, and delete, change destination waypoint (P/B/D), performance planning. Perform takeoff procedures. Perform area departure. Stalls and steep turns. Perform holding. Perform the following approaches: ILS, localizer back course to a missed approach, with flap/stab failure, NDB no flap approach and landing. Perform abnormal/emergency procedures to include: Flight Control Manual (jammed ailerons), Stab/Flap fail, Flaps fail up, combined hydraulic system fluid loss, loss of both hydraulic systems (FLT system loss on final approach). Arrival and landing performance initialization. Perform landing operations to include: No flap approach and landing, maneuver to landing with a powerplant failure from a visual approach. Shutdown checklist. Other flight procedures: Air hazard avoidance.

FAM/INST-106 4.0 T,C,R 2F3

Goal. Simulator Proficiency Check.

Requirement. Perform and identify appropriate level of automation through Mode awareness and intervention techniques. Accomplish required preflight planning/conduct brief and debrief. Perform SPZ-8000 tasks to include: Position initialization, build and store flight plan, performance initialization, track FMS course, direct to a fix (intercept course), program holding, present position holding, exit, resume, and delete, performance planning, change destination airport. Perform takeoff procedure (windshear). Perform area departure. Stalls and steep turns (if required). Perform an ILS approach. Perform abnormal procedures to include: Tuck and mach buffet, maximum rate of descent, ice accumulation on airframe, pneumatic/pressurization system, fuel and oil, air conditioning, fire protection (Fault Loop Alert with engine fire), avionics (DADC Miscompare), yaw damp, mach trim compensation, maximum rate of descent, DU, Fan Fail, followed by DU Hot. Perform emergency procedures to include: Emergency descent, fire in cabin or cockpit area, smoke in baggage compartment, personal and passenger emergency equipment, aircraft evacuation. Arrival and landing performance initialization. Perform landing operations. Shutdown checklist.

140. FLIGHT/SIMULATOR PERFORMANCE REQUIREMENTS

1. Purpose. To familiarize all pilots with C-20G flight characteristics, normal cockpit procedures, crew coordination, systems operations/limitations, emergency procedures, and gain designation as a Transport Third Pilot.

2. General

a. The time required to train a C-20G pilot from Transport Third Pilot (T3P) to Transport Aircraft Commander (TAC) is listed in the NATOPS Flight Manual, but will vary from that minimum depending on previous pilot experience. Training beyond T3P is accomplished to a great extent in conjunction with operational flights. Upgrade checks for T2P, TAC, and IP will be accomplished on dedicated training flights.

b. Minimum crew shall consist of an instructor pilot, pilot under instruction (PUI) and crew chief for all training flights.

c. All flights shall be flown with a designated NATOPS Instructor.

d. Local commands are granted the authority to waive requirements that are not applicable to the local operating environment.

e. Flights annotated with an "N" shall be flown at night with the intent that these night flights will be flown at least 30 minutes after official sunset. Flights annotated with "(N)" may be flown at night.

f. All flights annotated with an "E" shall be evaluated per T&R Manual, Administrative, Chapter 4, Paragraph 4004.3.b.

3. Refly Interval. Figure 1-1 shows refly interval and Mission Readiness Percentage for MOS 7553.

4. Aircrew Evaluation Flights. All pilots are required to have a NATOPS evaluation form completed annually upon completion of the following:

a. NATOPS Check (RQD-600).

- b. Instrument Check (RQD-601).
 - c. Any flight in the mission qualification, mission ready, or full mission qualification phase as recommended by the Squadron Standardization Board.
5. Aircrew Coordination. Aircrew coordination shall be briefed for all flights and/or events.

141. MISSION CAPABLE TRAINING

1. Familiarization and Instruments

- a. Purpose. To instruct PUI in aircraft ground handling: VFR and IFR flight characteristics and limitations, with emphasis on instrument flight procedures and proper response to aircraft emergency situations.
- b. Crew Requirement. PUI/IP/CC.
- c. Flight Training. (6 Flights, 12.0 Hours).

FAM/INST-100 2.0 T,C,R 1 ACFT

Goal. C-20G flight introduction.

Requirement. Brief review of takeoff, landing, and enroute procedures, APU operation and usage, limitations, emergencies (APU Fire on Ground), engine start, abnormal engine start indications, clear engine procedures, ignition system, fire detection/protection system, engine fire in flight, emergency evacuation, takeoff performance, Min vs. Flex EPR takeoff, Max vs. Min V1 performance, FMS initialization, FMS normal/abnormal indications. Exterior/interior inspection. Engine start/taxi, normal start, cockpit checklists. Takeoff and climb, flaps 20 degrees, autothrottle, Flex EPR takeoff (Demo), PUI accomplishes copilot duties (stress VFR lookout). Enroute, FMS usage for enroute descent planning. Descent/penetration. Approaches, two engine (must complete a minimum of two approaches), ILS/PAR, TACAN/VOR, missed approach. Landings, touch and go (four minimum) (brief procedures), full stop (demo).

FAM/INST-101 2.0 T,C,R 1 ACFT

Goal. Review normal flight maneuvers.

Requirement. Brief electrical system operation, limitations, associated annunciator lights, dual alternator/converter failure, AC/DC bus fault light, L-R alternator bearing failure, EFIS/EICAS system operation, EFIS/EICAS abnormalities, check PFD message, check V speeds message, CPL data invalid, oxygen system, cockpit oxygen systems, cabin oxygen system, flight instruments, Radar/TCAS/EGPWS/IRS's/FMS, climb and range performance, maximum thrust settlings, driftdown. Aborted takeoff. Exterior/interior inspection. Engine start/taxi, normal start, review unsatisfactory start, review clear engine procedures. Taxi (demo simulated aborted takeoff while taxiing). Takeoff and climb, flaps 20 degrees, autothrottle takeoff. Introduce airwork, steep turns, approaches to stall (clean, approach turn, and wind shear recovery), GPWS alerts. Climb/enroute, FMS usage. Approaches (two minimum) (two

engine), ILS, localizer back course (discuss if unavailable), circling approach, missed approach. Landings, touch and go (four minimum) (brief procedures), full stop (manual spoiler).

FAM/INST-102 2.0 T,C,R 1 ACFT

Goal. Introduce emergency procedures.

Requirement. Brief hydraulics/flight controls system operation and limitations, associated annunciator lights. Emergencies, Ground Spoiler message in flight, L-R Reverse Unlock message in flight, combined hydraulic system fluid loss, landing gear-alternate operation, flight control manual, stall barrier 1-2 message, stab flap fail message, brake/anti-skid system operation and abnormalities, anti-skid fail message, brake fail message, brake pedal message. Exterior/interior inspection. Engine start/taxi, normal start (discuss abnormal indications), taxi (practice simulated abort while taxing). Takeoff and climb, flaps 20 degrees, manual throttle takeoff, V1 cut. Airwork, steep turns, approaches to stall (clean, approach turn, and wind shear recovery), GPWS alerts. Climb/enroute, FMS usage. Approaches (two minimum), PAR, PAR (single engine), missed approach (two engine/single engine). Landings, touch and go (four minimum) (brief procedures), full stop (single engine landing/reverse).

2. GCA/Night Familiarization

a. Purpose. To become proficient in night operations and emergency responses at night.

b. Crew Requirement. PUI/IP/CC.

c. Flight Training. (1 Flight, 2.0 Hours).

NFAM-110 2.0 T,C,R 1 ACFT N

Goal. Review FAM/INST maneuvers at night.

Requirement. Brief pneumatics, cabin pressurization, system operation, limitations, associated annunciator lights, emergency descent procedure, loss of automatic pressurization control, left or right bleed air hot, air conditioning system operation, associated annunciator lights, smoke and fumes evacuation, cowl and airfoil anti-ice system operations, limitations, associated annunciator lights, aft equipment hot, left or right cowl anti-ice overheat, left or right wing hot message, left or right wing temp low message, normal cockpit lighting/emergency lighting. Exterior/interior inspection. Engine start/taxi, normal start. Takeoff and climb, flaps 20 degrees, manual throttle takeoff. Climb/enroute, FMS usage. Approaches, PAR/ILS/GPS/ASR/VOR/NDB/missed approach. Landings, touch and go (four minimum) (brief procedures), full stop.

3. Copilot Familiarization

a. Purpose. To instruct the PUI in the responsibilities and functions of the pilot flying in the right seat.

b. Crew Requirement. PUI/IP/CC.

c. Flight Training. (1 Flight, 2.0 Hours).

FAM/INST-120 2.0 T,C,R 1 ACFT

Goal. PUI in right seat to perform duties of copilot.

Requirement. Brief fuel system, operations and limitations, associated annunciator lights, left or right fuel pressure low, left or right fuel filter message, left or right fuel level low message, oil system operation, associated annunciator lights, left or right oil pressure message, manual performance calculations. Exterior/interior inspection. Engine start/taxi, normal start. Takeoff and climb, flaps 20 degrees, manual throttle, V1 cut. Airwork, steep turns, approaches to stall (clean, approach turn, wind shear recovery), GPWS alerts. Climb/enroute, FMS usage. Approaches, (minimum of two approaches, one of which must be single engine), coupled ILS, PAR/ILS (single engine), PAR/ILS, BC localizer (discuss if unavailable), missed approach (two engine and single engine). Landings, touch and go (four minimum) (brief procedures), full stop.

4. T3P Check

a. Purpose. To qualify the PUI as copilot (T3P) for operational flights in the C-20G aircraft.

b. Crew Requirement. PUI/IP/CC.

c. Prerequisite. NATOPS open and closed book examinations.

d. Flight Training. (1 Flight, 2.0 Hours).

CK-130 2.0 T,C,R E 1 ACFT

Goal. Evaluation sortie.

Requirement. PUI to demonstrate the ability to meet NATOPS qualification per NATOPS evaluation criteria. The flight evaluation is designed to measure with the maximum objectivity the degree of standardization demonstrated by the PUI and to ensure safety of flight.

142. MISSION READY TRAINING. Pilots undergoing instruction in this level will have gained the appropriate level of operational experience and been recommended by the Standardization Board to commence 200 level training. This level will allow the Co-pilot to gain experience in the left seat of the C-20G as well as expand aircraft systems knowledge and gain further operational experience in the aircraft to prepare them for the 300 level training and designation as an Aircraft Commander.

1. Copilot Review

a. Purpose. To review procedures, normal and emergency, and the responsibilities of the copilot.

b. Crew Requirement. T3P/IP/CC.

c. Flight Training. (6 Flights, 12.0 Hours).

FAM/INST-200 2.0 T,C,R 1 ACFT

Goal. Refine copilot performance.

Requirement. Brief review of takeoff, landing and enroute procedures, Flex EPR takeoff, APU operation and usage, limitations, APU fire in flight, APU exceedance message. Engine, ignition system and limitations, air start envelope, fire detection/protection, abnormal engine start indications on start, clear engine procedures, starter valve malfunction, engine fire on the ground, aborted takeoff, takeoff performance, Flex EPR takeoff, balanced field computation, adverse conditions, FMS, "what-if" function, "cross points" function, FMS messages. Interior/exterior inspection. Engine start/taxi, normal start, taxi, steering, normal braking, thrust, turn radius. Takeoff and climb, flaps 20 degrees, flex EPR, autothrottle takeoff. Climb/enroute, FMS usage. Airwork, steep turns, approach to stalls (clean, approach turn, wind shear recovery), GPWS alerts. Descent/penetration. Approaches, (two minimum) (two engine), ILS/PAR, TACAN/VOR, missed approach. Landings, touch and go (four minimum) (brief procedures), full stop, auto spoiler.

FAM/INST-201 2.0 T,C,R 1 ACFT

Goal. Refine copilot performance.

Requirement. Brief electrical system operation and limitations, associated annunciator lights, dual alternator/converter failure, AC/DC bus fault light, L-R alternator bearing fail, EFIS/EICAS system operation, abnormalities, check PFD message, check V speeds message, CPL data invalid, cockpit oxygen system, cabin oxygen system, flight instruments, Radar/TCAS/EGPWS/IRS's/FMS, climb and range performance, maximum thrust settings, driftdown, aborted takeoff. Interior/exterior inspection. Engine start/taxi, normal start, review unsatisfactory start, review clear engine procedures. Taxi (demo simulated aborted takeoff while taxiing). Takeoff and climb, flaps 20 degrees, autothrottle takeoff. Climb/enroute, FMS usage. Airwork, steep turns, approaches to stall (clean, approach turn, wind shear recovery), GPWS alerts. Approaches (two minimum) (two engine), ILS, localizer back course (discuss if unavailable), circling approach, missed approach. Landings, touch and go (four minimum) brief procedures, full stop (manual spoiler).

FAM/INST-202 2.0 T,C,R 1 ACFT

Goal. Refine copilot performance.

Requirement. Brief hydraulics/flight controls system operation and limitations, associated annunciator lights, Ground Spoiler message in flight, L-R Reverser Unlock message in flight, Auxiliary Hyd Hot message, landing gear-alternate operation, flight control manual, total hydraulic failure, Stab Flap Fail message, Single Rudder Limit message, Stall Barrier 1-2 Fail message, brakes/anti-skid system operation, Anti-Skid Fail message, Brake Fail message, Brake Ovht message, Brake Maintenance Required message. Exterior/interior inspection.

Engine start/taxi, normal start (discuss abnormal indications), taxi (practice simulated abort while taxiing). Takeoff and climb, flaps 20 degrees, manual throttle takeoff, V1 cut. Climb/enroute, FMS usage. Airwork, steep turns, approaches to stall (clean, approach turn, wind shear recovery), GPWS alerts. Approaches (two minimum), PAR, PAR (single engine), ASR, missed approach (single/two engine). Landings, touch and go (four minimum) brief procedures, full stop (single engine reverse).

FAM/INST-203 2.0 T,C,R 1 ACFT

Goal. Refine copilot performance.

Requirement. Brief pneumatics, cabin pressurization system operation and limitations, associated annunciator lights, emergency descent procedure, loss of automatic pressurization control, left or right engine hot message, left or right pylon hot message, air conditioning system operation and associated annunciator lights, smoke and fumes evacuation, smoke detect message, left or right cooling turbine hot message, cowl and airfoil anti-ice system operation and limitations, associated annunciator lights, left or right pitot heat fail message, left or right cowl pressure low message, left or right wing hot message, left or right wing temp low message, windshield anti-icing operation, pitot static system heating. Exterior/interior inspection. Engine start/taxi, normal start. Takeoff and climb, flaps 20 degrees, auto throttle takeoff. Climb/enroute, FMS usage. Approaches (two minimum), PAR/ILS (single and two engine), localizer, ASR/VOR/NDB, missed approach (single/two engine). Landings, touch and go (four minimum) (brief procedures), no flap (low approach only), full stop.

FAM/INST-204 2.0 T,C,R 1 ACFT

Goal. Refine copilot performance.

Requirement. Brief fuel system operation and limitations, associated annunciator lights, left or right fuel pressure low, Left or Right Fuel Filter message, Left or Right Fuel Level Low message, oil system operation, associated annunciator lights, Left or Right Oil Pressure message, performance, manual performance calculations, FMS landing data, FMS takeoff data. Exterior/interior inspection. Engine start/taxi, normal start. Takeoff and climb, flaps 20 degrees, manual throttle, V1 cut. Airwork, steep turns, approaches to stall (clean, approach turn, wind shear recovery), GPWS alerts. Climb/enroute, FMS usage. Approaches (two minimum), coupled ILS, PAR/ILS (single engine), BC localizer, missed approach (single/two engine). Landings, touch and go (four minimum) (brief procedures), full stop.

2. T2P Check

- a. Purpose. To qualify the T3P as a T2P copilot for operational flights in the C-20G aircraft.
- b. Crew Requirement. T3P/IP/CC.
- c. Prerequisite. NATOPS open and closed book examinations.
- d. Flight Training. (1 Flight, 2.0 Hours).

CK-210 2.0 T,C,R E 1 ACFT

Goal. Evaluation sortie.

Requirement. T3P to demonstrate the ability to meet the NATOPS evaluation criteria. Flight is designed to measure with maximum objectivity the degree of standardization demonstrated by the PUI and the PUI's ability to fly from the left seat and handling of the aircraft under any type of circumstance.

143. MISSION QUALIFICATION TRAINING. Pilots undergoing instruction in this phase of training will have gained the appropriate level of operational experience in the C-20G aircraft as a Co-pilot, been recommended by the Standardization Board to start the TAC flight syllabus, and demonstrated the judgement and maturity required of an Aircraft Commander.

1. TAC Familiarization

a. Purpose. To review all previously covered items and ensure that the T2P is adequately prepared for a TAC check.

b. Crew Requirement. T2P/IP/CC.

c. Flight Training. (3 Flights, 6.0 Hours).

FAM/INST-300 2.0 T,C,R 1 ACFT

Goal. Upgrade the T2P to TAC.

Requirement. Brief review of takeoff, landing, and enroute procedures, systems limitations, APU, engines, ignition, fire detection/protection, fuel and oil systems, abnormal engine start, cold start, cross bleed start, start valve malfunction, external start, APU emergencies, engine fire (on ground and in flight), abort, air start envelope (APU/Engine), decision making, takeoff performance, Flex EPR vs. Rated EPR, balanced field, obstacle clearance, contaminated runway, high altitude takeoff, short field runway. Exterior/interior inspection. Engine start/taxi, normal start and taxi. Takeoff and climb, flaps 20 degrees, manual throttle, V1 cut. Airwork, steep turns, approaches to stall (clean, approach turn, wind shear recovery), GPWS alerts. Enroute, FMS usage. Approaches (two minimum) (single/two engine), ILS/VOR, missed approach (single/two engine). Landings, touch and go (brief procedures), full stop, auto spoiler.

FAM/INST-301 2.0 T,C,R 1 ACFT

Goal. Upgrade the T2P to TAC.

Requirement. Brief electrical system and limitations, annunciator lights and emergencies, EFIS/EICAS, cockpit oxygen system, cabin oxygen system, radar, IFF, TCAS, EGPWS, NAV/COMM radios, climb and range performance, maximum thrust settings, single engine range, decision making, preflight planning, Minimum Equipment List (MEL), cargo loading/configurations/weight and balance, NAVSUP 505, foreign clearance guide, Customs/Agriculture, OPARS, FMS/Cruise performance, "Perf Plan" function, "Single Engine" function, "Position Sensors" page. Exterior/interior inspection. Engine start/taxi, normal start, review unsatisfactory start, review

clear engine procedures, taxi, practice abort procedures. Takeoff and climb, flaps 20 degrees, manual throttle takeoff, V1 cut. Climb/enroute, FMS usage. Airwork, steep turns, approaches to stall (clean, approach turn, wind shear recovery), GPWS alerts. Approaches (single/two engine), ILS/VOR, missed approach (single/two engine). Landings, touch and go (brief procedures), full stop, manual spoiler.

FAM/INST-302 2.0 T,C,R 1 ACFT

Goal. Upgrade the T2P to TAC.

Requirement. Brief hydraulic systems, limitations, associated annunciator lights, emergencies, flight controls, brakes/anti-skid, "Combined Hydraulic Hot" message, "Stall Barrier 1-2 Fail" message, combined hydraulic system fluid loss, no-flap approach and landing, decision making, wind shear, de-icing, anti-icing, other adverse weather, polar/high latitude NAV, VFR due regard, landing performance, adverse conductors, short runway, high altitude. Exterior/interior inspection. Engine start/taxi, normal start, (discuss abnormal indications), taxi. Takeoff and climb, flaps 20 degrees, manual throttle takeoff, V1 cut. Climb/Enroute, FMS usage. Airwork, steep turns, approaches to stall (clean, approach turn, wind shear recovery), GPWS alerts. Approaches (single/two engine), PAR/ASR, missed approach (single/two engine). Landings, touch and go (brief procedures), no flap landing (to low approach only), full stop (single engine reverse).

FAM/INST-303 2.0 T,C,R 1 ACFT

Goal. Upgrade the T2P to TAC.

Requirement. Brief pneumatics/air conditioning system, limitations, emergencies, associated annunciator lights, airfoil/engine anti-ice system, emergencies, associated annunciator lights, windshield anti-ice, pitot heat system, emergencies, associated annunciator lights, decision making, Wing 3710 instructions, squadron SOP, RON responsibilities, scheduling authorities (NALO, JOSAC, etc.), reports/HAZREPS, VIP handling. Exterior/interior inspection. Engine start/taxi, normal start. Takeoff and climb, flaps 20 degrees, simulate T3P right seat takeoff, V1 cut. Climb/enroute, FMS usage. Airwork, steep turns, approaches to stall (clean, approach turn, wind shear recovery), GPWS alerts. Approaches, coupled ILS, PAR/ILS (single/two engine), BC localizer (discuss if unavailable), missed approach (single/two engine). Landings, touch and go (brief procedures), full stop (simulate T3P right seat landing).

2. TAC Check

a. Purpose. To upgrade the T2P to TAC for operational flights in the C-20G aircraft.

b. Crew Requirement. T2P/IP/CC.

c. Prerequisite. NATOPS open and closed book examinations.

d. Flight Training. (1 Flight, 2.0 Hours).

CK-310 2.0 T,C,R E 1 ACFT

Goal. Evaluation flight.

Requirement. T2P to demonstrate the ability to meet NATOPS evaluation criteria for TAC. The flight evaluation is designed to measure with the maximum objectivity the knowledge and abilities of the PUI.

3. FCF Check

- a. Purpose. To train and qualify the PUI for designation as a Functional Check Pilot upon qualification as a TAC. The flight will not be completed until the PUI has been recommended to commence the TAC syllabus. The PUI will fly from the right seat.
- b. Crew Requirement. T2P/IP/CC.
- c. Prerequisite. Recommendation to commence the TAC syllabus.
- d. Flight Training. (1 Flight, 2.0 Hours).

FCF-304 2.0 T,C,R E 1 ACFT

Goal. The intent of this syllabus flight is to train and qualify the PUI for designation as a Functional Check Pilot upon qualification/designation as a TAC. The flight shall not be completed until the PUI has been recommended to commence the TAC syllabus. To achieve the maximum training possible, the PUI shall fly in the right seat.

Requirement. Brief crew brief, FCF checklist review, maintenance control/QA brief, review emergency procedures and limitations, MEL, crew coordination. Flight, exterior/interior inspection, flight procedures IAW FCF checklist. Post flight procedures, maintenance control/QA debrief, completion of proper documentation.

144. FULL-MISSION QUALIFICATION TRAINING

1. Purpose. To provide the TAC a formal training syllabus for qualification as a squadron International/Overwater Transport Aircraft Commander.
2. Crew Requirement. TAC/IP/CC.
3. Prerequisite. Designation as a C-20G TAC, participated in at least one overseas logistics flight/detachment with multiple legs as a co-pilot, and completed the MCAF International/Overwater procedures open book exam.
4. Flight Training. (2 Flights, 12.0 Hours).

NAV-400 6.0 T,C,R 1 ACFT

Goal. PUI performs extended range/overwater/international flight operations.

Requirement. Brief/Overview, flight procedures/conduct of flight, MNPS airspace, NOPAC, and NAT Tracks, review CFLSWINST 3710.4 (International/Overwater guide), view 4B87/3 slide presentation, review FLIP charts and documents, review Jeppesen enroute/term charts, ICAO NAV and COMM procedures knowledge, various emergency procedures/ditching, HF procedures and utilization, navigation systems, overwater fuel planning

and terminology, OPARS computer flight plan, manual fuel planning, use of the overwater master document (preflight, enroute, and postflight), knowledge of overwater checklist, review of overwater operations, MEL. Enroute, chart work, HF procedures, conduct of flight. Debrief. Checkflight Recommendation.

NAV CK-410 6.0 T,C,R E 1 ACFT

Goal. Evaluation of TAC to perform extended range/overwater/international flight operations.

Requirement. TAC to demonstrate the ability to manage a crew and aircraft on an extended, over water flight under ICAO flight rules.

150. INSTRUCTOR AND SPECIAL FLIGHT/SIMULATOR PERFORMANCE REQUIREMENTS

1. Purpose. To provide a formal training syllabus for qualification as a squadron instructor pilot (IP) in the C-20G aircraft. The IP syllabus is designed to enable the individual to gain experience prior to being recommended for NATOPS Instructor.
2. Crew Requirement. IUT/IP/CC.
3. Prerequisite. Must be a designated C-20G TAC. Recommended by the Standardization Board. Complete Instructor Pilot Syllabus Discussion Period.
4. Flight Training. (5 Flights, 10.0 Hours).

IUT-500 2.0 T,C,R 1 ACFT

Goal. Instruction introduction (IUT in right seat).

Requirement. Brief flight procedures and conduct of flight. Interior/exterior inspection (complete preflight and ditching drill). Engine start/taxi, battery start, taxi. Takeoff and climb, V1 cut, SID or radar vectors. Airwork, steep turns, approach stall series/GPWS alerts, emergency descent. Climb/enroute, FMS instruction. Enroute descent or penetration. Approaches, precision and non-precision (two engine/single engine), circling approach, missed approach. Landings (VFR pattern).

IUT-501 2.0 T,C,R 1 ACFT

Goal. Instructor training (IUT in jump seat). The purpose of this flight is for observation only. The IUT will be in the jump seat observing an instructional event. The IUT will observe all facets of the evaluation, including the brief and debrief.

Requirement. Evaluating pilot will determine description of events monitored and systems/techniques discussed.

IUT-502/503 2.0 T,C,R 1 ACFT

Goal. Instructor training (IUT will conduct a syllabus

training flight).

Requirement. Same as IUT-500.

IUT CK-504 2.0 T,C,R E 1 ACFT

Goal. Instructor qualification/standardization flight.

Requirement. Demonstrate the requisite instructional ability and standardization expected of an instructor pilot.

151. SPECIAL TRAINING

1. Purpose. To conduct evaluation flights and annual recurrent training.

2. General. Flights flown in this stage are evaluation flights; consequently, per T&R Manual, Administrative, CRP is not awarded.

3. Prerequisites. Reference the C-20G NATOPS Flight Manual, OPNAVINST 3710.7 series, and applicable publications.

4. Crew Requirement. T3P/T2P/TAC/IP/CC.

5. Flight Training. (2 Flights, 4.0 Hours).

RQD-600 2.0 E 1 ACFT

Goal. Annual NATOPS Evaluation.

Requirement. Proficiency in the utilization of all aspects of the C-20G. The proficiency expected by the evaluator in this flight shall be commensurate with the experience of the pilot under evaluation.

RQD-601 2.0 E 1 ACFT

Goal. Annual Instrument Evaluation.

Requirement. The evaluation shall be conducted per the criteria contained within the Instrument Flight Manual. File and fly an instrument round robin using all navigation equipment available. Evaluate all phases of instrument flight to include precision and non-precision approaches, partial panel, and instrument holding. Demonstrate proficiency in handling instrument related emergencies.

6. NATOPS Recurrent Training (NRT). (2 Flights, 4.0 Hours).

NRT-602/603 2.0 1 ACFT

Goal. NRT's consist of two annual flights that are developed to improve pilot proficiency.

Requirement. A solid working knowledge of aircraft systems, limitations, and emergency procedures is essential. In-flight emergency training and high-work (steep turns/stalls) will only be conducted with a designated instructor pilot. NRT's may be conducted day or night and are local area training flights. They are not NATOPS check flights, but rather line oriented training flights.

160. ORDNANCE REQUIREMENTS. Not applicable.

C-20 T&R MANUAL

IUT	500	2.0	*	N/A	X	X	X	1 ACFT	
	501	2.0	*	N/A	X	X	X	1 ACFT	
	502	2.0	*	N/A	X	X	X	1 ACFT	
	503	2.0	*	N/A	X	X	X	1 ACFT	
IUT CK	504	2.0	*	N/A	X	X	X	1 ACFT	
SPECIAL TRAINING									
RQD	600	2.0	C	N/A			X	1 ACFT (NATOPS)	
	601	2.0	C	N/A			X	1 ACFT (INST)	
	602	2.0	*	N/A				1 ACFT	
	603	2.0	*	N/A				1 ACFT	

Figure 1-1.--MOS 7553 Refly Interval, Mission Readiness Percentage, cont.

PILOT FLIGHT UPDATE CHAINING

<u>STAGE</u>	<u>FLIGHT</u>	<u>SORTIES UPDATED</u>
CK	130	100,101,102,110,120
CK	210	200,201,202,203,204
CK	310	300,301,302,303
NAV	410	400
IUT	504	500,501,502,503

Figure 1-2.--Pilot Flight Update Chaining.