

KC-130 Detachment	
INSTRUCTOR DESIGNATION	Flight Engineers
LATI	Not Required
ANI	3
WTI	1
DEFTACI	Not Required
NSI	1
FEI	5

11. Definitions

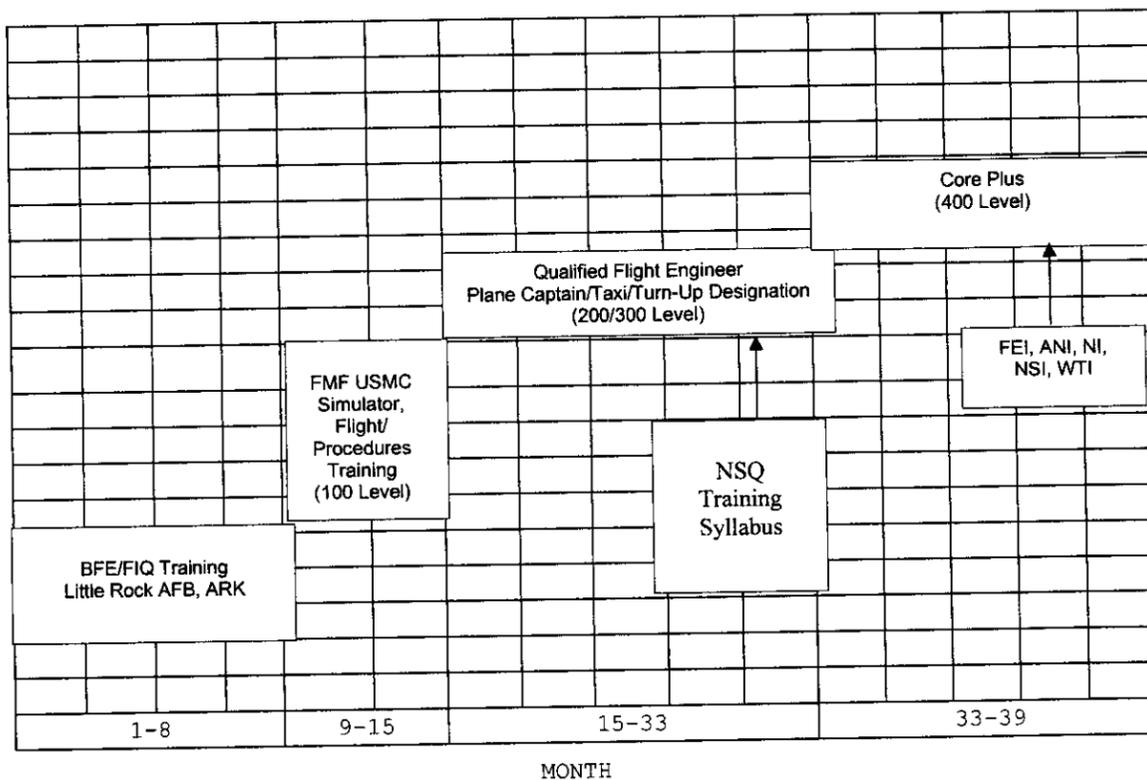
a. Currency. A control measure used to provide an additional margin of safety based on exposure frequency to a particular skill. It is a measure of time since the last event demanding that specific skill. Loss of currency does not affect a loss of Combat Readiness Percentage (CRP). For example, currency determines minimum altitudes in rules of conduct based upon the most recent low altitude fly date. Specific currency requirements for individual type mission profiles can be found in the Aviation T&R Program Manual.

b. Proficiency. Proficiency is a measure of achievement of a specific skill. Re-fly factors establish the maximum time between demonstration of those particular skills. CRP is a measurement of "demonstrated proficiency." If an aircrew exceeds the re-fly factor for a particular event, the individual loses CRP for that particular event. To regain proficiency, an individual shall complete the delinquent event with a proficient crewman/flight lead. If an entire unit loses proficiency, unit instructors shall regain proficiency by completing an event with instructors from a like unit. If not feasible, the instructor shall regain proficiency by completing the event with another instructor. If a unit has only one instructor and cannot complete the event with an instructor from another unit, he shall regain proficiency with another Flight Engineer or as designated by his Commanding Officer.

c. Qualification. A qualification is a status assigned to personnel based on demonstration of proficiency in a specific skill. Specific criteria to achieve qualifications shall be delineated in individual T&R chapters. Upon successful completion of qualification criteria, commanding officers may issue an appropriate qualification letter for inclusion in the NATOPS jacket and APR/MPR. Aircrew do not lose a qualification as a function of re-fly factor for individual events. Loss of proficiency (delinquent re-fly factor) for all associated qualification core skill events constitutes loss of that qualification. Re-qualification requires demonstration of proficiency. Specific re-qualification criteria shall be delineated in individual T&R chapters.

d. Designation. A designation is a status assigned to an individual based on leadership ability. A designation is a command specific, one-time occurrence and remains in effect until removed for cause. Specific designation requirements shall be delineated in individual T&R chapters. Commanders shall issue a designation letter to the individual upon the occasion of original designation, with appropriate copies for inclusion in the NATOPS jacket and APR.

12. KC-130FRT Flight Engineer Progression Model. The training progression model below provides recommended core skill, qualification, and designation attainment timelines for the average Flight Engineer.



201. PROGRAMS OF INSTRUCTION (POI) FOR BASIC, TRANSITION, CONVERSION, AND KC-130J SERIES CONVERSION FLIGHT ENGINEER. Training Track 1 and 2 Student Flight Engineer shall complete the following codes at the Tactical Squadron prior to beginning Core Basic Skills Training:

- SFAM- 100-114 Aircraft Systems and Procedures
- FAM- 115-119 Aircraft Familiarization Flights
- REV- 130-142 Aircraft Systems Review and Troubleshooting
- CK- 150 Intermediate Check
- SMGR- 160-161 Engine Run-Up
- SFCF- 162-163 FCF Procedures
- MGR- 164-165 Engine Run-Up and Taxi
- MGRCK- 166 Engine Run-Up and Taxi Check
- FCF- 167 FCF Check
- MFAM- 170-174 Mission Familiarization
- RQD- 680 FE-2 NATOPS Check

WEEKS	COURSE	PERFORMING ACTIVITY
1-12	KC-130 FE Ground Course	CNATT-MARU
13-15	KC-130 Flight Simulator	Tactical Squadron
16-52	Core Skills Introduction Training	Tactical Squadron
52-100	Core Basic Training	Tactical Squadron
101-124	Core Advanced Training	Tactical Squadron
125-150	Core Plus Training	Tactical Squadron

202. POI FOR REFRESHER FLIGHT ENGINEER

WEEKS	COURSE	PERFORMING ACTIVITY
1-3	KC-130 Flight Simulator	Tactical Squadron
4-6	Core Introduction Training	Tactical Squadron
7-12	Core Basic Training	Tactical Squadron
13-14	Core Advanced Training	Tactical Squadron

203. POI FOR INSTRUCTOR FLIGHT ENGINEER

WEEKS	COURSE	PERFORMING ACTIVITY
1-2	Flight Engineer Instructor	Tactical Squadron
1	Night Systems Instructor	MAWTS-1
1-7	Weapons and Tactics Instructor	MAWTS-1

204. GROUND TRAINING COURSES OF INSTRUCTION

1. Ground training shall be conducted for each syllabus level event/code.
2. Squadron level ground training required to complete the syllabus are listed in each syllabus level.
3. The following external ground training courses of instruction are required to complete the syllabus.

<u>COURSE</u>	<u>ACTIVITY</u>
Naval Aircrew Candidate Course	NAS Pensacola, FL
Flight Engineer Organizational Ground Maintenance Course	CNATT-MARU Cherry Point
Flight Engineer Initial Qualification	VMGR-234 JRB FT Worth, TX
Flight Engineer Mission Qualification	Tactical Squadron
Weapons and Tactics Course	MAWTS-1 Yuma, AZ
Advanced Airlift Tactics Training Course	AATTC St. Joseph, MO
NITE lab	Tactical Squadron

4. The following external training course is recommended to complete the syllabus:

<u>COURSE</u>	<u>ACTIVITY</u>
Survival, Evasion, Resistance and Escape (SERE)	NAS Brunswick, ME or NAS North Island, CA

205. AIRCREW TRAINING REFERENCES. The following references shall be utilized to ensure safe and standardized training procedures, grading criteria, and aircraft operation:

- NATOPS General Flight and Operating Instructions (OPNAVINST 3710.7_)
- NATOPS Flight Manuals (NFM)
- NATOPS Instrument Flight Manual (NIFM)
- NATOPS Air-to-Air Refueling Manual (AAR Manual)
- KC-130 Tactical Manual (TACMAN)
- T&R Program Manual
- MAWTS-1 Course Catalog
- Allied Tactical Publication - 56 (ATP-56) Air to Air Refueling Flight Clearance (FC) - issued by NAVAIR

206. GRADUATE LEVEL COURSES. There are 2 graduate level courses (NSI, WTI) that qualify instructors for specific portions of the T&R syllabus. The requirements for these instructor certifications are contained in the MAWTS-1 Course Catalog. Squadron T&R Instructors shall be designated by Commanding Officers and will instruct specific mission types delineated in the individual event descriptions. Stage Instructors are utilized by the FRS primarily will be designated by Commanding Officers and will instruct in specific T&R mission types, such as LRNAV, FORM, TACNAV, AR, ALZ and AD.

207. EVENT PERFORMANCE REQUIREMENTS

1. General

a. The time required to train a KC-130 Flight Engineer to core plus will vary depending on previous Flight Engineer experience. Basic, Transition, Model Conversion, and Series Conversion Flight Engineer's shall fly the entire syllabus. Refresher Flight Engineer's represent a varying background and should fly flights coded with an "R". Commanding Officers will review the qualifications, previous experience, currency, and demonstrated ability of refresher Flight Engineers with a view towards waiving and/or combining required flights.

b. Once a Flight Engineer has completed the core basic introduction series and maintains currency in type and model, no requirement exists to re-fly core basic introduction flights.

c. Environmental conditions (day or night) or Night Systems conditions shall be annotated in flight events and the syllabus matrix as follows:

Code	Requirement
D	Shall be flown or conducted during day.
N	Shall be flown or conducted at night (using available night vision devices or flown unaided).
(N)	May be flown or conducted day or night; if at night, available night vision devices may be used or flown unaided.
NS	Shall be flown or conducted at night using available night vision devices.
(NS)	May be flown or conducted day or night; if at night, available night vision devices shall be used.
N*	Event Shall be flown or conducted at night unaided.
(N*)	Event may be flown or conducted at night; if at night, shall be flown unaided.

d. All flights annotated with an "E" shall be evaluated per the Aviation T&R Program Manual.

e. Devices

Code	Requirement
A	Event performed in aircraft.
S	Event performed in simulator or a simulated practical application.
A/S	Event performed in aircraft preferred/simulator optional.*
S/A	Event performed in simulator preferred/aircraft optional.

* All initial codes will utilize aircraft only.

f. Minimum required refresher flights are indicated with an "R". Additional guidance concerning refresher training requirements is contained in the Aviation T&R Program Manual.

g. Non-NSQ Flight Engineers shall be instructed by an FE-NSI when conducting NS training. For Flight Engineers that are NSQ syllabus complete, Non-NSQ syllabus initial codes may be flown with an NSQ-FEI/ANI/NI provided the instructor is proficient in the code being conducted.

h. For NS operations, the fixed-wing minimum altitudes delineated in the Aviation T&R Program Manual, shall be adhered to in all phases of flight except for ALZ operations and airdrops from IP inbound, at which point a descent to airdrop altitude or final approach procedure may be conducted. Minimum altitudes for Aerial Delivery shall be as per NWP 3-22.5-KC-130, Vol. 1, Chapter 6 and Appendix H.

2. Crew Resource Management. Crew Resource Management shall be briefed for all flights and events.

208. CORE SKILL INTRODUCTION TRAINING. Upon completion of this phase of training, the Flight Engineer will be NATOPS qualified as a FE-2. The Flight Engineer will be capable of basic aircraft operation to include emergency procedures and crew resource management. NATOPS check may be conducted any time after completion of the core skill introduction phase. Commanders shall not designate student Flight Engineers as an FE-2 until satisfactory completion of the entire core skills introduction phase. Upon NATOPS check completion, Flight Engineers shall log the RQD-680 tracking code.

1. Simulator Familiarization

a. Purpose. Familiarize the student Flight Engineer with his responsibilities and duties in the correct use of aircraft checklists, crew coordination, normal & emergency procedures, remedial actions for system malfunctions, aircraft limitations, and performance data.

b. General. Basic, model/series conversion, and refresher Flight Engineers shall be trained by a qualified instructor for this phase of training.

(1) One hour of formal classroom training is required for 1 hour of flight simulator training. Refresher Flight Engineers need only complete syllabus periods annotated with an "R". Aircraft utilization authorized if the OFT is not available.

(2) Upon completion of simulator training, the student Flight Engineer will be proficient and have demonstrated a thorough working knowledge of all aircraft systems, aircraft checklists, crew coordination, diagnosis of airborne malfunctions, and remedial actions that can be accomplished while airborne.

c. Crew Requirements. Simulator instructor and pilot as required.

d. Ground/Academic Training. Prior to SFAM-100, all Basic/Conversion/Refresher Flight Engineers shall complete ground school course consisting of aircraft systems descriptions, normal and emergency procedures, cockpit resource management, basic weight and balance, aircraft pre-flight and post-flight procedures, emergency evacuation procedures, bailout procedures, donning and use of all emergency equipment.

e. Simulator Training. (15 Events, 32.0 Hours).

SFAM-100 2.0 IPT/CPT/OFT/WST S

Goal. Introduce the Flight Engineers responsibilities/duties, crew coordination, aircraft limitations, and use of expanded checklists.

Requirement. Student Flight Engineer shall perform responsibilities/duties associated with the expanded checklist from the cockpit checklist through the engine run-up checklist with assistance as necessary from the instructor Flight Engineer. Student shall demonstrate knowledge of NATOPS aircraft limitations.

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. Ground academic training.

External Syllabus Support. IPT/CPT/OFT/WST.

SFAM-101

2.0 IPT/CPT/OFT/WST S

Goal. Introduce the Flight Engineer's responsibilities/duties, crew coordination, aircraft limitations, and use of expanded checklists.

Requirement. Review previous instructions as necessary. Student Flight Engineer shall perform responsibilities/duties associated with the expanded checklist from the before take-off checklist through the secure checklist with assistance as necessary from the instructor Flight Engineer. Student shall demonstrate knowledge of NATOPS aircraft limitations.

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. SFAM-100.

External Syllabus Support. IPT/CPT/OFT/WST.

SFAM-102

2.0 IPT/CPT/OFT/WST S

Goal. Introduce start malfunctions.

Requirement. Review previous instructions as necessary. The student Flight Engineer shall identify start malfunctions and perform remedial actions IAW the FRS simulator guide.

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. SFAM-101.

External Syllabus Support. IPT/CPT/OFT/WST.

SFAM-103

2.0 IPT/CPT/OFT/WST S

Goal. Review ground emergency malfunctions.

Requirement. Review previous instruction as necessary. Student Flight Engineer shall demonstrate proper execution of responsibilities/duties, and perform all checklists observing applicable aircraft limitations IAW FRS simulator guide.

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. SFAM-102.

External Syllabus Support. IPT/CPT/OFT/WST.

SFAM-104 2.0 R E IPT/CPT/OFT/WST S

Goal. Evaluate the student Flight Engineer's progress in cockpit procedures, start malfunctions, and ground emergency procedures IAW NATOPS and FRS simulator guide.

Requirement. Student Flight Engineer shall demonstrate proper execution of responsibilities/duties, and perform all checklists observing applicable aircraft limitations IAW FRS simulator guide. The student Flight Engineer shall satisfactorily complete progress evaluation prior to progressing to the OFT stage of simulator training.

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. SFAM-103.

External Syllabus Support. IPT/CPT/OFT/WST.

SFAM-105 2.0 IPT/CPT/OFT/WST S

Goal. Introduce the student Flight Engineer to the aircraft engine systems, malfunction, and emergency procedures.

Requirement. Review previous instruction as necessary. Student Flight Engineer shall perform remedial actions and emergency procedures related to aircraft engine systems per the FRS simulator guide.

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. SFAM-104.

External Syllabus Support. IPT/CPT/OFT/WST.

SFAM-106 2.0 IPT/CPT/OFT/WST S

Goal. Introduce aircraft propeller systems, malfunctions, and emergency procedures.

Requirement. Review previous instruction as necessary. Student Flight Engineer shall demonstrate knowledge of aircraft propeller systems and perform remedial actions and emergency procedures related to aircraft propeller systems IAW FRS simulator guide.

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. SFAM-105.

External Syllabus Support. IPT/CPT/OFT/WST.

- SFAM-107 2.0 IPT/CPT/OFT/WST S
- Goal. Introduce aircraft electrical systems, malfunctions, and emergency procedures.
- Requirement. Review previous instruction as necessary. Student Flight Engineer shall demonstrate knowledge of aircraft electrical systems and perform remedial actions, emergency procedures related to aircraft electrical systems IAW FRS simulator guide.
- Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.
- Prerequisite. SFAM-106.
- External Syllabus Support. IPT/CPT/OFT/WST.
- SFAM-108 2.0 IPT/CPT/OFT/WST S
- Goal. Introduce aircraft bleed air, anti-ice, and deicing systems, malfunctions, and emergency procedures.
- Requirement. Review previous instruction as necessary. Student Flight Engineer shall demonstrate knowledge of aircraft bleed air, anti-ice, and deicing systems and perform remedial actions and emergency procedures related to aircraft bleed air, anti-ice, and deicing systems.
- Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.
- Prerequisite. SFAM-107.
- External Syllabus Support. IPT/CPT/OFT/WST.
- SFAM-109 2.0 IPT/CPT/OFT/WST S
- Goal. Introduce aircraft fuel systems, malfunctions, and emergency procedures.
- Requirement. Review previous instruction as necessary. Student Flight Engineer shall demonstrate knowledge of aircraft fuel systems and perform remedial actions and emergency procedures related to aircraft fuel systems IAW FRS simulator guide.
- Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.
- Prerequisite. SFAM-108.
- External Syllabus Support. IPT/CPT/OFT/WST.

SFAM-110 2.0 IPT/CPT/OFT/WST S

Goal. Introduce aircraft hydraulic systems, malfunctions, and emergency procedures.

Requirement. Review previous instruction as necessary. Student Flight Engineer shall demonstrate knowledge of aircraft hydraulic systems and perform remedial actions and emergency procedures related to aircraft hydraulic systems IAW FRS simulator guide.

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. SFAM-109.

External Syllabus Support. IPT/CPT/OFT/WST.

SFAM-111 2.0 IPT/CPT/OFT/WST S

Goal. Introduce aircraft air conditioning/ pressurization systems, malfunctions, and emergency procedures.

Requirement. Review previous instruction as necessary. Student Flight Engineer shall demonstrate knowledge of aircraft air conditioning and pressurization systems and perform remedial actions, emergency procedures related to aircraft air conditioning/pressurization systems IAW FRS simulator guide.

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. SFAM-110.

External Syllabus Support. IPT/CPT/OFT/WST.

SFAM-112 2.0 IPT/CPT/OFT/WST S

Goal. Introduce aircraft comm/nav systems, voice procedures, malfunctions, and emergency procedures.

Requirement. Review previous instruction as necessary. Student Flight Engineer shall demonstrate knowledge of aircraft comm/nav systems and voice procedures and perform remedial actions and emergency procedures related to aircraft comm/nav systems IAW FRS simulator guide.

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. SFAM-111.

External Syllabus Support. IPT/CPT/OFT/WST.

SFAM-113 2.0 IPT/CPT/OFT/WST S

Goal. Introduce aircraft aerial refueling systems, malfunctions, and emergency procedures.

Requirement. Review previous instruction as necessary. Student Flight Engineer shall demonstrate knowledge of aircraft aerial refueling systems and perform remedial actions and emergency procedures related to aircraft aerial refueling systems IAW FRS simulator guide.

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. SFAM-112.

External Syllabus Support. IPT/CPT/OFT/WST.

SFAM-114 4.0 R E IPT/CPT/OFT/WST S

Goal. Evaluate simulator progress.

Requirement. The student Flight Engineer shall successfully complete a standard evaluation in the correct use of aircraft checklists, crew coordination, normal & emergency procedures, remedial actions for system malfunctions, and aircraft performance data.

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. SFAM-113.

External Syllabus Support. IPT/CPT/OFT/WST.

2. Flight Familiarization

a. Purpose. Familiarize the student Flight Engineer with normal flight operations under various flight conditions.

b. General. This portion of training deals with actual flight operations. The student Flight Engineer must possess and display a thorough working knowledge of all aircraft systems prior to the start of flight training IAW FRS syllabus.

c. Crew Requirements. Minimum flight crew including Flight Engineer instructor IAW NAVAIR 01-75GAA-1.

d. Ground/Academic Training. The familiarization stage requires a minimum of 2 hours of ground instruction prior to each flight.

e. Flight Training. (6 Events, 24.0 Hours).

FAM-115 4.0 R 1 KC-130 A (N)

Goal. Familiarize the student Flight Engineer with correct turnaround inspection and normal flight operations.

Requirement. The student Flight Engineer shall be familiar with correct turnaround inspection, and normal flight operations IAW NA01-75GAA-6-1 and NFM.

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. SFAM-114.

FAM-116 4.0 R 1 KC-130 A (N)

Goal. Familiarize the student Flight Engineer with time management of turnaround inspection, computation of performance data, and normal flight operations.

Requirement. The student Flight Engineer shall be familiar with time management of turnaround inspections, computation of performance data, and normal flight operations IAW NA01-75GAA-6-1 and NA0175GAA-1.

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. FAM-115.

FAM-117 4.0 R 1 KC-130 A (N)

Goal. Refine time management of turnaround inspection responsibilities and duties to include performance data computation, Weight and Balance Form 365-4 completion, and normal flight operations during night time conditions.

Requirement. The student Flight Engineer shall be able to coordinate and perform aircraft turnaround inspection per current instructions utilizing proper time management to accomplish all required tasks, including correct performance data computation, accurate Weight and Balance Form 365-4 completion, and normal flight operations during night time conditions.

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. FAM-116.

FAM-118 4.0 R 1 KC-130 A (N)

Goal. Familiarize the student Flight Engineer in all weather operations and procedures per NFM.

Requirement. The student Flight Engineer shall be able to perform his duties in all weather conditions.

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. FAM-117.

FAM-119 4.0 R 1 KC-130 A (N)

Goal. Familiarize student Flight Engineer with simulated engine out approach, landing and go around procedures.

Requirement. The student Flight Engineer shall be familiar with all normal and emergency procedures related to engine out flight conditions.

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. FAM-118.

FAM-120 4.0 R 1 KC-130 A (N)

Goal. Familiarize the student Flight Engineer on extended over water flight operations to include mission planning, range prediction, range control, endurance, and use of engine/fuel logs.

Requirement. The student Flight Engineer shall be able to perform normal procedures and mission planning; and use aircraft performance data (range prediction, range control, & endurance), and engine/fuel logs associated with extended over water flights.

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. FAM-119.

3. Systems Review

a. Purpose. Review aircraft systems, systems operation, system malfunctions, corrective actions, and troubleshooting per current instructions.

b. General. This portion of training deals with actual flight operations. The student Flight Engineer must possess and display a thorough working knowledge of all aircraft systems prior to the start of flight training IAW FRS syllabus. Instructor Flight Engineer may induce malfunctions and simulated emergencies as practical.

c. Crew Requirements. Minimum flight crew including Flight Engineer instructor IAW NAVAIR 01-75GAA-1.

d. Ground/Academic Training. The systems review stage requires a minimum of 2 hours of ground instruction prior to each flight. Simulator Review Codes should be completed with associated system review codes prior to completion of this stage of training, full visual and motion simulator is recommended.

e. Flight Training. (13 Events, 52.0 Hours).

REV-130 4.0 1 KC-130 A

Goal. Review aircraft engines and GTC/APU.

Requirement. The student Flight Engineer shall be knowledgeable on aircraft engine operation as it pertains to interoperability of the aircraft during flight operations, possible malfunctions, troubleshooting, and corrective actions IAW FRS student guide.

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. FAM-120.

REV-131 4.0 1 KC-130 A

Goal. Review aircraft engine related systems.

Requirement. The student Flight Engineer shall be knowledgeable on aircraft engine related systems operation as it pertains to interoperability of the aircraft during flight operations, possible malfunctions, troubleshooting, and corrective actions IAW FRS student guide.

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. REV-130.

REV-132 4.0 1 KC-130 A

Goal. Review aircraft propeller system.

Requirement. The student Flight Engineer shall be knowledgeable on aircraft propeller system operation as it pertains to interoperability of the aircraft during flight operations, possible malfunctions, troubleshooting, and corrective actions including the blade assemblies, barrel assembly, dome assembly, spinner assembly, anti-icing/deicing assemblies, control assembly, governing system, synchrophasing system, and propeller controls IAW FRS student guide.

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. REV-131.

REV-133 4.0 R 1 KC-130 A

Goal. Review the aircraft AC electrical systems.

Requirement. The student Flight Engineer shall be knowledgeable on AC electrical systems operation as it pertains to interoperability of the aircraft during flight operations, possible malfunctions, troubleshooting, and corrective actions including the primary and secondary

systems, indicators, and system warning lights IAW FRS student guide.

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. REV-132.

REV-134

4.0 1 KC-130 A

Goal. Review the aircraft DC electrical system.

Requirement. The student Flight Engineer shall be knowledgeable in aircraft DC electrical systems as it pertains to interoperability of the aircraft during flight operations including TR units, the battery system, indicators, and system warning lights, their operation, possible malfunctions, troubleshooting, and corrective actions IAW FRS student guide.

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. REV-133.

REV-135

4.0 1 KC-130 A

Goal. Review bleed air systems, anti-icing and deicing systems.

Requirement. The student Flight Engineer shall be knowledgeable on the aircraft bleed air systems as it pertains to interoperability of the aircraft during flight operations to include the air turbine motor, associated bleed air valves & ducting, nacelle preheat, bleed air system controls, and isolation valves, wing and empennage anti-icing, propeller anti-icing/de-icing, and NESA system, possible malfunctions, troubleshooting, and corrective actions IAW FRS student guide.

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. REV-134.

REV-136

4.0 1 KC-130 A

Goal. Review air conditioning, pressurization, and oxygen systems.

Requirement. The student Flight Engineer shall be knowledgeable on aircraft air conditioning systems as it pertains to interoperability of the aircraft during flight operations including the flight station and cargo compartment air conditioning systems, outflow valve, safety valve, cabin pressure controls, and oxygen systems operation, possible malfunctions, troubleshooting, and corrective actions IAW FRS student guide.

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. REV-135.

REV-137 4.0 1 KC-130 A

Goal. Review the aircraft fuel systems.

Requirement. The student Flight Engineer shall be knowledgeable on aircraft fuel systems as it pertains to interoperability of the aircraft during flight operations including the refueling/de-fueling system & procedures, tank configuration, water removal, cross feed, fuel transfer & jettison, IFR, single-point refueling systems, fuel system controls, and the fuel indicating systems operation, possible malfunctions, troubleshooting, and corrective actions IAW FRS student guide.

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. REV-136.

REV-138 4.0 1 KC-130 A

Goal. Review the aircraft utility hydraulic systems.

Requirement. The student Flight Engineer shall be knowledgeable on the utility hydraulic systems as it pertains to interoperability of the aircraft during flight operations to include the basic hydraulic system and sub systems (portion of flight controls, landing gear, IFR, flaps, wheel brakes, and nose wheel steering systems) possible malfunctions, troubleshooting, and corrective actions IAW FRS student guide.

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. REV-137.

REV-139 4.0 1 KC-130 A

Goal. Review the aircraft booster and auxiliary hydraulic systems.

Requirement. The student Flight Engineer shall be knowledgeable on aircraft booster & auxiliary hydraulic systems as it pertains to interoperability of the aircraft during flight operations to include basic hydraulic systems & subsystems portion of the flight controls, ramp & aft cargo door, emergency brakes, and the emergency nose landing gear extension systems operation, possible malfunctions, troubleshooting, and corrective actions IAW FRS student guide.

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

- Prerequisite. REV-138.
- REV-140 4.0 R 1 KC-130 A
- Goal. Review the aircraft communications systems.
- Requirement. The student Flight Engineer shall be knowledgeable on communication systems operation as it pertains to interoperability of the aircraft during flight operations, voice procedures, possible malfunctions, troubleshooting, and corrective actions IAW FRS student guide.
- Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.
- Prerequisite. REV-139.
- REV-141 4.0 R 1 KC-130 A
- Goal. Review navigation and flight instrument systems.
- Requirement. The student Flight Engineer shall be knowledgeable on aircraft navigation system operation as it pertains to interoperability of the aircraft during flight operations, troubleshooting, and corrective actions IAW FRS student guide.
- Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.
- Prerequisite. REV-140.
- REV-142 4.0 R 1 KC-130 A
- Goal. Review aircraft aerial refueling systems.
- Requirement. The student Flight Engineer shall be knowledgeable on aircraft aerial refueling systems operation as it pertains to interoperability of the aircraft during flight operations, possible malfunctions, troubleshooting, and corrective actions IAW FRS student guide.
- Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.
- Prerequisite. REV-141.

4. Intermediate Progress Evaluation

- a. Purpose. Evaluate the student Flight Engineer's overall progress.
- b. General. Flight portion of the progress evaluation should be conducted on an extended over water flight or an extended overland flight to include a remain overnight (RON).
- c. Crew requirements. Minimum flight crew to include a Flight Engineer instructor.

d. Flight Training. (1 Event, 4.0 Hours).

CK-150 4.0 R E 1 KC-130 A

Goal. Evaluate the student Flight Engineer's overall progress.

Requirement. The student Flight Engineer shall have demonstrated his knowledge of normal and emergency procedures, all aircraft systems operations, possible malfunctions, troubleshooting, and corrective actions IAW FRS student guide and NFM.

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. Completion of all familiarization and review codes. The student should complete simulator review events prior to this evaluation.

5. Maintenance Ground Runs and Functional Check Flights (FCF)

a. Purpose. Familiarize the student Flight Engineer on post maintenance run-up procedures and FCF procedures.

b. General. All required FCF's will be conducted upon completion of post maintenance run-ups.

c. Crew Requirements. 1 pilot and Flight Engineer instructor.

d. Academic/Ground Training. Each flight requires 1 hour of classroom instruction.

e. Simulator Training. (4 Events, 14.0 Hours).

f. Ground Training. (3 Events, 9.0 Hours).

g. Flight Training. (1 Event, 2.0 Hours).

SMGR-160 3.0 IPT/CPT/OFT/WST S

Goal. Introduce ground maintenance run-up procedures.

Requirement. The student Flight Engineer shall be familiar with ground maintenance run-up procedures IAW FRS Maintenance Ground run-up and Functional check-flight student guide. The student Flight Engineer shall occupy the left seat during this phase.

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable maintenance ground run-up and NATOPS flight manuals.

Prerequisite. CK-150.

- SMGR-161 3.0 IPT/CPT/OFT/WST S
- Goal. Refine ground maintenance run-up procedures.
- Requirement. The student Flight Engineer shall be proficient on ground maintenance run-up procedures IAW FRS Maintenance Ground run-up and Functional check-flight student guide. The student Flight Engineer shall occupy the left seat during this phase.
- Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable maintenance ground run-up and NATOPS flight manuals.
- Prerequisite. SMGR-160.
- External Syllabus Support. IPT/CPT/OFT/WST.
- SFCF-162 4.0 IPT/CPT/OFT/WST S
- Goal. Introduce FCF procedures to student Flight Engineer per current instructions.
- Requirement. The student Flight Engineer shall be familiar with the FCF procedures IAW FRS Maintenance Ground run-up and Functional check-flight student guide.
- Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.
- Prerequisite. SMGR-161.
- External Syllabus Support. IPT/CPT/OFT/WST.
- SFCF-163 4.0 IPT/CPT/OFT/WST S
- Goal. Refine FCF procedures per current instructions.
- Requirement. The student Flight Engineer shall perform an "A" profile FCF IAW FRS Maintenance Ground run-up and Functional check-flight student guide and NFM.
- Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.
- Prerequisite. SMGR-162.
- External Syllabus Support. IPT/CPT/OOFT/WST.
- MGR-164 3.0 1 KC-130 A/S
- Goal. Refine ground maintenance run-up procedures.
- Requirement. The student Flight Engineer shall perform a phase ground maintenance run-up from the left seat IAW FRS Maintenance Ground run-up and Functional check-flight student guide.

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable maintenance ground run-up and NATOPS flight manuals.
Prerequisite. SMGR-163.

MGR-165 3.0 1 KC-130 A

Goal. Refine ground maintenance run-up procedures and introduce taxi procedures.

Requirement. The student Flight Engineer shall perform a phase ground maintenance run-up from the left seat and demonstrate proper taxi procedures IAW FRS Maintenance Ground run-up and Functional check-flight student guide.

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable ground run-up and NATOPS flight manuals.

Prerequisite. MGR-164.

MGRCK-166 3.0 R 1 KC-130 A

Goal. Maintenance ground run-up check.

Requirement. The student Flight Engineer shall be proficient on phase maintenance ground run-up procedures IAW FRS Maintenance Ground run-up and Functional check-flight student guide.

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable ground run-up and NATOPS flight manuals.

Prerequisite. MGR-165.

FCF-167 2.0 R 1 KC-130 A

Goal. Review FCF procedures.

Requirement. The student Flight Engineer shall perform a Functional check-flight IAW FRS Maintenance Ground run-up and Functional check-flight student guide and NFM.

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. MGR-166.

6. Mission Familiarizations

a. Purpose. Familiarize the student Flight Engineer with aircraft missions.

b. General. Instructor Flight Engineer will induce emergencies and malfunctions as practical.

c. Crew Requirements. Minimum flight crew and Flight Engineer instructor.

d. Academic/Ground Training. Each flight requires 1 hour of classroom instruction.

e. Flight Training. (5 Events, 20.0 Hours).

- MFAM-170 4.0 R 1 KC-130 A
- Goal. Fixed-wing aerial refueling procedures familiarization.
- Requirement. The student Flight Engineer shall be familiar with fixed-wing aerial refueling procedures including the transfer of fuel to receiver aircraft.
- Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.
- Prerequisite. SFAM-113, CK-150.
- External Syllabus Support. Fixed-wing receiver, special use airspace.
- MFAM-171 4.0 R 1 KC-130 A
- Goal. Refine fixed-wing aerial refueling missions.
- Requirement. The student Flight Engineer shall demonstrate proper procedures including transfer of fuel to receiver aircraft and EMCON fixed-wing aerial refueling missions.
- Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.
- Prerequisite. MFAM-170.
- External Syllabus Support. Fixed-wing receiver, special use airspace.
- MFAM-172 4.0 R 1 KC-130 A
- Goal. Introduce helicopter refueling missions.
- Requirement. The student Flight Engineer shall be familiar with helicopter refueling procedures including the transfer of fuel to receiver aircraft.
- Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.
- Prerequisite. SFAM-113, CK-150.
- External Syllabus Support. Rotary-wing receiver, special use airspace.

MFAM-173 4.0 R 1 KC-130 A

Goal. Low level missions familiarization.

Requirement. The student Flight Engineer shall demonstrate proper procedures during low level missions IAW FRS student guide.

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. CK-150.

External Syllabus Support. Military Training Route.

MFAM-174 4.0 2 KC-130 A

Goal. Introduce formation procedures.

Requirement. The student Flight Engineer shall be familiar with formation flight procedures IAW NFM.

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. CK-150.

External Syllabus Support. Special Use Airspace.

209. CORE SKILL BASIC TRAINING

1. General. Upon completion of this phase of training, the Flight Engineer will be daytime and Night System Qualified in the non-LAT (NSQ) environment for the basic core skill mission areas. They include tactical navigation (TACNAV) in a threat environment (THR(X)), Assault Landing Zone operations (ALZ), FW/RW air-to-air refueling (AR), rapid ground refueling (RGR) operations and long range operation. Focus on flight crew resource management, aircraft preflight preparation, location and use of emergency equipment, ground and in-flight emergency procedures, aircraft post flight procedures, systems operation, system malfunctions, corrective actions, fault isolation and in-flight fault isolation. At the completion of this phase, the Flight Engineer (FE₂) shall be NATOPS qualified, designated a "Flight Engineer 1" RQD 681.

a. Flight Engineers receiving initial training shall be instructed by either current Squadron Flight Engineer Instructors or NSI's (as required).

b. Upon completion of each event, the FE-2 shall be able to fly subsequent events in the stage without instruction. For example: Once an FE-2 has completed AR 213 he is now considered AR complete for both day and night, rotary wing. The FE-2 is now qualified to fly all events in the HAR stage without the aid of an FEI.

c. Within this stage of training the Flight Engineer will fly a Functional Check Flight Perform applicable flight profiles and associated checks IAW check flight conditions, to include a review of normal and emergency procedures during an FCF profile A, B, C, or D. Ensure proficiency

in functional check flight procedures. Upon completion the Flight engineer shall log RQD-602.

d. On completion of the required events contained in this phase the Flight Engineer 2 shall be observed on a Flight Engineer 1 NATOPS evaluation. NATOPS check may be conducted any time after completion of the core basic introduction FAM stage. Commanders shall not designate student Flight Engineers as an FE-1 until satisfactory completion of the entire 200 series phase with the exception NS codes. Upon NATOPS check completion, Flight Engineers shall log the RQD-681 tracking code. The provisions of the NFM and OPNAVINSTINST 3710.7_ apply. NATOPS check shall be administered by a designated ANI/NI.

e. Conduct Flight Engineer (FE-1) annual NATOPS re-certification. The FE-1 shall be administered an annual NATOPS check for standardization, training, and readiness.

(1) Upon NATOPS check completion, Flight Engineers shall log the RQD-682 tracking code. The provisions of the NFM and OPNAVINSTINST 3710.7_ apply.

(2) NATOPS check shall be administered by a designated ANI/NI.

(3) RQD-682 qualification shall be updated yearly.

2. Familiarization

a. Purpose. Maintain Flight Engineer proficiency on administrative flights.

b. General. Flight Engineer shall fly initial codes with a qualified FEI/ANI/NI. Subsequent events may be flown with a qualified crew provided the Flight Engineer meets the pre-requisites.

c. Crew Requirements. Minimum flight crew and Flight Engineer instructor.

d. Academic/Ground Training. Each flight requires 1 hour of classroom instruction.

e. Flight Training. (1 Event, 2 Hours).

FE-200 2.0 1 KC-130 A/S (N)

Goal. Maintain proficiency in normal and emergency procedures during day or night flight operations.

Requirement. Review normal and emergency procedures during day flight operations per current instructions.

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. FE-2 (RQD-680) Qualification.

3. Night Systems Familiarization

a. Purpose. To develop proficiency at operating aircraft at night using night vision devices in a non-LAT environment.

b. General

(1) Non-NSQ Flight Engineers shall be instructed by an FE-NSI when conducting NS Training. Non-NSQ syllabus initial codes may be flown with an NSQ-FEI/ANI/NI provided the instructor is proficient in the code being conducted.

(2) Required flights for NSQ are NS-204, NS-205, TACNAV-223, TACNAV-224.

c. Crew Requirements. NATOPS minimum crew or greater unless otherwise specified for the event.

d. Ground/Academic Training. NITE lab (includes Night Vision Systems, N.S. Human Factors and Night Environment ASPs).

e. Flight Training. (2 Event, 4 Hours).

NS-204 2.0 1 KC-130 A NS

Goal. HLL NVD Operations.

Requirement. Preflight shall include a flight station, cargo compartment and exterior lighting demonstration with NVDs. Mission must be flown IAW volume I of the T&R manual high light level standards.

Performance Standard. Satisfactory completion per applicable NATOPS flight manual, KC-130 TACMAN (AS REQUIRED), and OPNAVINST 3710.7 .

Prerequisite. MAWTS-1 NVD ASP ground instruction and NITE lab.

NS-205 2.0 R 1 KC-130 A NS

Goal. LLL NVD Operations.

Requirement. Conduct all operations included in NS-204 under LLL conditions.

Performance Standard. Satisfactory completion per applicable NATOPS flight manual, KC-130 TACMAN (AS REQUIRED), and OPNAVINST 3710.7 .

Prerequisite. NS-204 and MAWTS-1 NVD ASP ground instruction and NITE lab.

4. Aerial Refueling Familiarization

a. Purpose. Refine Flight Engineer in aerial refueling missions per current instructions.

b. General. FE shall conduct normal and emergency procedures associated with aerial refueling in addition to crew responsibilities in day, night and NVD procedures.

c. Crew Requirements. NATOPS minimum crew or greater unless otherwise specified for the event.

d. Ground/Academic Training. Review NATOPS Flight Manual, NATOPS flight manual supplements, NATOPS Air-to-Air Refueling Manual, KC-130 TACMAN, and MAWTS-1 Tactical AR Courseware relating to fixed-wing AR procedures.

e. Flight Training. (4 Events, 16.0 Hours).

AR-210 4.0 R 1 KC-130 A/S

Goal. Day fixed wing aerial refueling procedures.

Requirement. Review normal and emergency aerial refueling procedures PER KC-130 TACMAN and AR Manual. Use of EMCON procedures is optional.

Performance Standard. Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. FE-200.

External Syllabus Support. Fixed Wing Receiver Aircraft and special use airspace.

AR-211 4.0 R 1 KC-130 A/S N

Goal. Night fixed wing aerial refueling procedures.

Requirement. Review normal and emergency aerial refueling procedures at night (aided or unaided) PER KC-130 TACMAN and AR Manual. Use of EMCON procedures is optional.

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. AR-210.

External Syllabus Support. Fixed Wing Receiver Aircraft and special use airspace.

AR-212 4.0 R 1 KC-130 A/S

Goal. Day helicopter aerial refueling procedures.

Requirement. Review normal and emergency helicopter refueling procedures PER KC-130 TACMAN and AR Manual. Use of EMCON procedures is optional.

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. FE-200.

External Syllabus Support. Rotary Wing Receiver Aircraft and special use airspace.

AR-213 4.0 R 1 KC-130 A/S N

Goal. Night helicopter aerial refueling procedures.

Requirement. Review normal and emergency helicopter refueling procedures at night (aided or unaided) PER KC-130 TACMAN and AR Manual. Use of EMCON procedures is optional.

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. AR-212.

External Syllabus Support. Rotary Wing Receiver Aircraft and special use airspace.

5. Tactical Navigation

- a. Purpose. Train the Flight Engineer in low level procedures.
- b. General. Non-NSQ Flight Engineers shall be instructed by an FE-NSI when conducting NS Training. Non-NSQ syllabus initial codes may be flown with an NSQ-FEI/ANI/NI provided the instructor is proficient in the code being conducted.
- c. Crew Requirements. NATOPS minimum crew or greater unless otherwise specified for the event.
- d. Ground/Academic Training. Review NATOPS Flight Manual, KC-130 TACMAN, and MAWTS-1 ASP Low Level Navigation Courseware.
- e. Flight Training. (3 Events, 6.0 Hours).

TACNAV-220 2.0 R 1 KC-130 A/S

Goal. Day low level procedures.

Requirement. Fly a low level route PER KC-130 TACMAN procedures.

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. FE-200.

TACNAV-223 2.0 1 KC-130 A/S NS

Goal. NVG HLL low level procedures.

Requirement. Fly a night low level route PER KC-130 TACMAN procedures.

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

- Prerequisite. NS-204, TACNAV-220.
- TACNAV-224 2.0 R 1 KC-130 A/S NS
- Goal. NVG LLL low level procedures.
- Requirement. Fly a night low level route PER KC-130 TACMAN procedures.
- Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.
- Prerequisite. NS-205, TACNAV-220.
6. Aerial Delivery
- a. Purpose. Introduce the Flight Engineer in aerial delivery procedures per current instructions.
- b. General. Non-NSQ Flight Engineers shall be instructed by an FE-NSI when conducting NS Training. Non-NSQ syllabus initial codes may be flown with an NSQ-FEI/ANI/NI provided the instructor is proficient in the code being conducted.
- c. Crew Requirements. NATOPS minimum crew or greater unless otherwise specified for the event.
- d. Ground/Academic Training. Review NFM, KC-130 TACMAN, and MAWTS-1 AD courseware information regarding personnel and cargo delivery procedures.
- e. Flight Training. (2 Flights, 4.0 Hours).
- AD-241 2.0 1 KC-130 A/S
- Goal. Introduce aerial delivery procedures.
- Requirement. Fly and review aerial delivery mission of cargo or troops PER TACMAN.
- Performance Standard. Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.
- Prerequisite. FE-200.
- External Syllabus Support. AD Platoon, USAF CCT, USMC MMT.
- AD-242 2.0 R 1 KC-130 A/S N
- Goal. Introduce night aerial delivery procedures.
- Requirement. Fly and review aerial delivery mission of cargo or troops and NVG considerations PER TACMAN.
- Performance Standard. Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.
- Prerequisite. NS-204 or 205 HLL, 205 LLL, AD-241.

External Syllabus Support. AD Platoon, USAF CCT, USMC MMT.

7. Long Range Over Water Navigation

- a. Purpose. Refine the Flight Engineer in extended over water procedures.
- b. General. Fly an extended over water flight and review over water procedures placing emphasis on mission planning, use of aircraft performance data, and engine/fuel logs.
- c. Crew Requirements. NATOPS minimum crew or greater unless otherwise specified for the event.
- d. Ground/Academic Training. Specific fuel panel procedures and NATOPS long range cruise considerations.
- e. Flight Training. (1 Event, 8.0 Hours).

LRNAV-250 8.0 R 1 KC-130 A/S (N)

Goal. Refine extended over water procedures.

Requirement. Fly an extended over water flight and review over-water procedures placing emphasis on mission planning, use of aircraft performance data, and engine/fuel logs.

Performance Standard. Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. FE-200.

8. Assault Landing Zones

- a. Purpose. Train the Flight Engineer on Assault landing zones and Expeditionary Airfield Operations.
- b. General. Non-NSQ Flight Engineers shall be instructed by an FE-NSI when conducting NS Training. Non-NSQ syllabus initial codes may be flown with an NSQ-FEI/ANI/NI provided the instructor is proficient in the code being conducted.
- c. Crew Requirements. NATOPS minimum crew or greater unless otherwise specified for the event.
- d. Ground/Academic Training. Review Assault Landing Zone operations in KC-130 TACMAN. Review MAWTS-1 ASP ALZ courseware. Familiarize the Flight Engineer with ground emergencies in an austere environment and performance data for specific circumstances applicable pubs for unimproved runway operation.
- e. Flight Training. (3 Events, 6.0 Hours).

ALZ-271 2.0 R 1 KC-130 A/S

Goal. Introduce ALZ procedures at improved/unimproved fields.

Requirement. Introduce maximum effort takeoffs and landings at improved/unimproved field IAW TACMAN. Review all appropriate performance data.

Performance Standard. Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. FE-200.

External Syllabus Support. MMT, CCT.

ALZ-272 2.0 1 KC-130 A/S NS

Goal. Introduce NVG (HLL) ALZ procedures.

Requirement. Introduce maximum effort takeoffs and landings in a high light level IAW TACMAN. Review all appropriate performance data.

Performance Standard. Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. FE-200, NS-204, ALZ-271.

External Syllabus Support. MMT, CCT.

ALZ-273 2.0 R 1 KC-130 A/S NS

Goal. Introduce NVG (LLL) ALZ procedures.

Requirement. Introduce maximum effort takeoffs and landings in a low light level IAW TACMAN. Review all appropriate performance data.

Performance Standard. Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. FE-200, NS-204/205, ALZ-271.

External Syllabus Support. MMT, CCT.

9. Rapid Ground Refueling

a. Purpose. Train the Flight Engineer in rapid ground refueling.

b. General. Non-NSQ Flight Engineers shall be instructed by an FE-NSI when conducting NS Training. Non-NSQ syllabus initial codes may be flown with an NSQ-FEI/ANI/NI provided the instructor is proficient in the code being conducted.

c. Crew Requirements. NATOPS minimum crew or greater unless otherwise specified for the event.

d. Ground/Academic Training. Review KC-130 TACMAN RGR procedures and MAWTS-1 ASP RGR courseware. Complete a class that includes but is not limited to a review of hand and arm signals, defense of site, flight operations around site, and crew responsibilities/CRM on the ground.

e. Flight Training. (1 Event, 0.0 Hours).

RGR-274 0.0 R 1 KC-130 A (N)

Goal. Train the FE in rapid ground refueling.

Requirement. Conduct rapid ground refueling with actual aircraft engines running PER NATOPS and TACMAN.

Performance Standard. Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. FE-200.

210. CORE SKILL ADVANCED TRAINING

1. Low Altitude Tactics (LAT)

a. General. Upon completion of this level, the Flight Engineer will be proficient in LAT (TACNAV) low level, Assault Landing Zone operations, basic aerial delivery procedures and Defensive Tactics against a surface-based threats THRX. The purpose of this phase of training is to provide a combat qualified Flight Engineer. Flight Engineer receiving initial training shall be instructed by either current a Flight Engineer Instructor (RQD-690), or WTI (RQD-692) when required.

b. Upon completion of each stage in this phase, the FE shall be able to fly subsequent events in the stage without instruction. For example: Once an FE-1 has completed TACNAV-321 he is now considered TACNAV complete. The FE-1 is now qualified to fly all events in the AR phase without the aid of an instructor.

c. Flight Training. (1 Event, 3.0 Hours).

TACNAV-321 3.0 R 1 KC-130 A/S

Goal. Introduce and qualify the Flight Engineer, or to maintain proficiency for LAT in the duties associated with low altitude tactics flights in a low to medium ground threat environment.

Requirement. Emphasize cargo compartment preparation, crew briefing, lookout doctrine, scan for threats, crew coordination and combat entry/exit checklists. This event may include air-to-air refueling, aerial delivery or any type of air/land delivery.

Performance Standard. Per the applicable NATOPS flight manual and KC-130 TACMAN.

Prerequisite. FE-200, TACNAV-220.

External Syllabus Support. Approved LAT training route, Threat Emitters.

2. Formation

a. Purpose. Train the Flight Engineer in formation procedures.

b. General

(1) Non-NSQ Flight Engineers shall be instructed by an FE-NSI when conducting NS Training. Non-NSQ syllabus initial codes may be flown with an NSQ-FEI/ANI/NI provided the instructor is proficient in the code being conducted.

(2) A qualified instructor (FE) shall accompany all initial event crewmembers.

c. Crew Requirements. NATOPS minimum crew or greater unless otherwise specified for the event.

d. Ground/Academic Training. Review NATOPS Flight Manual, KC-130 TACMAN, and MAWTS-1 ASP Low Level Navigation Courseware.

e. Flight Training. (1 Event, 2.0 Hours).

FORM-331 2.0 R 2 KC-130 A/S (N)

Goal. Proficiency training in formation procedures.

Requirement. Fly a two plane formation flight PER NATOPS and TACMAN.

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. FE-200.

3. Threat Reaction (Radar) (THR(X)R)

a. Purpose. Qualify the Flight Engineer in the coordinated use of defensive maneuvering and the Aircraft Survivability Suite (ASE) against surface-to-air threat systems.

b. General. Flight Engineer conducting training will be instructed by a WTI for all initial codes provided the WTI is current in the event.

c. Crew Requirements. NATOPS minimum crew or greater unless otherwise specified for the event.

d. Ground/Academic Training. Prior to THR(X)-360, review pertinent chapters in the KC-130 TACMAN and receive:

(1) MAWTS-1 ASP course on Tactical Aircrew Coordination.

(2) MAWTS-1 ASP course on MAGTF Ground Based Air Defense System (GBADS).

(3) MAWTS-1 ASP course on KC-130 Specific Threat Counter-Tactics.

(4) Specific training on installed KC-130FRT ASE equipment.

e. Flight Training. (1 Event, 3.0 Hours).

THRX-360 3.0 R 1 KC-130 A (N)

Goal. Train the Flight Engineer duties in Radar Counter Tactics.

Requirement. Conduct and train in Radar Counter Tactics. Refine FE to pertinent ground loading procedures, system setup and operation of ASE systems in flight, emphasis on evasive flight techniques in coordination with ASE employment. Conduct defensive maneuvering against Radar threat. Emphasize briefing, conduct of flight, and lookout doctrine.

Performance Standard. Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. FE-200, TACNAV-220.

Ordnance. 140 decoy flares, 160 chaff.

External Syllabus Support. Approved LAT training route, Threat Emitters, SST team.

4. Threat Reaction IR Counter tactics/ASE Intro

a. Purpose. Refine the Flight Engineer IR Counter-tactics procedures.

b. General. Flight Engineer conducting training will be instructed by a WTI for all initial codes provided the WTI is current in the event.

c. Crew Requirements. NATOPS minimum crew or greater unless otherwise specified for the event.

d. Ground/Academic Training. Prior to THRX-361, the Flight Engineer shall review pertinent chapters in the KC-130 TACMAN and receive:

(1) MAWTS-1 ASP course on tactical aircrew coordination.

(2) MAWTS-1 ASP course on MAGTF ground based air defense system (GBADS).

(3) MAWTS-1 ASP course on KC-130 specific threat counter-tactics.

(4) Specific training on installed KC-130FRT ASE equipment.

e. Flight Training. (1 Event, 3.0 Hours).

THRX-361 3.0 R 1 KC-130 A (N)

Goal. Train the Flight Engineer duties in IR Counter tactics.

Requirement. Conduct and train in IR Counter tactics. Introduce FE to pertinent ground loading procedures, system setup and operation of ASE systems in flight, emphasis on evasive flight techniques in coordination with ASE employment.

Conduct defensive maneuvering against ground IR threat.
Emphasize briefing, conduct of flight, and lookout doctrine.

Performance Standard. Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. FE-200, TACNAV-220.

Ordnance. 300 decoy flares.

External Syllabus Support. SST Team.

211. CORE SKILL PLUS TRAINING

1. General. Upon completion of this level, the Flight Engineer will be proficient in unaided tactical navigation, day and night high altitude aerial delivery, battle field illumination aerial delivery, defensive tactics against an air-based threat, and night time unaided assault landings.

a. Flight Engineers receiving initial training shall be instructed by a WTI. Once they have completed the initial event, subsequent events may be flown with proficient aircrew.

b. Upon completion of each stage in this phase, the FE-1 shall be able to fly subsequent events in the stage without instruction. For example: Once an FE-1 has completed AD-444 he is now considered AD complete. The FE-1 is now qualified to fly all events in the AD phase without the aid of an instructor.

2. Aerial Delivery

a. Purpose. Refine the Flight Engineer in high altitude environment aerial delivery procedures per TACMAN.

b. General. Flight Engineer conducting training shall be instructed by a WTI for all initial codes.

c. Crew Requirements. NATOPS minimum crew or greater unless otherwise specified for the event.

d. Ground/Academic Training. Review NFM, KC-130 TACMAN, and MAWTS-1 AD courseware information regarding personnel and cargo delivery procedures.

e. Flight Training. (2 Events, 4.0 Hours).

AD-442 2.0 R 1 KC-130 A/S (N)

Goal. Introduce and qualify the Flight Engineer, or to maintain proficiency for the qualified Flight Engineer in the duties associated with high altitude environment aerial delivery.

Requirement. Emphasize cargo compartment preparation, crew briefing, lookout doctrine, scan for threats, crew coordination and combat entry/exit checklists. This event may include air-to-air refueling, aerial delivery or any type of air/land delivery.

Performance Standard. Per the applicable NATOPS flight manual and KC-130 TACMAN.

Prerequisite. FE-200, AD-241.

External Syllabus Support. AD Platoon.

AD-444 2.0 R 1 KC-130 A/S N

Goal. Introduce and qualify the Flight Engineer, or to maintain proficiency for the qualified Flight Engineer in the duties and procedures associated with battlefield illumination.

Requirement. Emphasize cargo compartment preparation, crew briefing, crew coordination and combat entry/exit checklists.

Performance Standard. Per the applicable NATOPS flight manual and KC-130 TACMAN.

Prerequisite. FE-200, NS-204/205.

Ordnance. LU-2A/B.

External Syllabus Support. Ordnance personnel, approved training area.

3. Defensive Tactics (DEFTAC)

a. Purpose. Introduce defensive tactics utilized in air-to-air engagements by combining maneuvering and use of the ASE suite. Emphasize lookout doctrine and use of the Rear Vision Device (RVD).

b. General. The DEFTAC qualification requirements consist of DEFTAC-461 and DEFTAC-462. The following is recommended but not required:

(1) Aircraft should have fully operational ASE suite.

(2) Appropriate Chaff and Decoy Flares should be loaded prior to flight.

c. Crew Requirements. NATOPS minimum crew or greater unless otherwise specified for the event.

d. Ground/Academic Training. Academic prerequisites Per MAWTS-1 KC-130FRT Defensive Tactics Course. Prior to DEFTAC-461, the Flight Engineer shall receive:

(1) This phase of instruction may be taught locally utilizing the MAWTS-1 ASP, or in conjunction with AATTC, by a qualified instructor. DEFTAC shall be instructed by a DEFTACI/WTI.

(2) MAWTS-1 ASP course on Tactical Aircrew Coordination.

(3) MAWTS-1 ASP course on MAGTF Ground Based Air Defense System (GBADS).

(4) MAWTS-1 ASP course on KC-130 Specific Threat Counter-tactics.

(5) Specific training on installed KC-130FRT ASE equipment.

e. Flight Training. (2 Events, 4.0 Hours).

DEFTAC-461 2.0 1 KC-130, 1 Adversary A

Goal. Introduce the Flight Engineer in defensive tactics mission maneuvering relative to an air threat.

Performance Standard. Per the applicable NATOPS flight manual and KC-130 TACMAN.

Prerequisite. FE-200, TACNAV-220, TACNAV-321.

Ordnance. Standard Chaff load (160) and Decoy Flare load (140).

External Syllabus Support. Appropriate aggressor aircraft.

DEFTAC-462 2.0 R 1 KC-130, 2 Adversary A

Goal. Refine and maneuvering relative to an air threat.

Performance Standard. Per the applicable NATOPS flight manual and KC-130 TACMAN.

Prerequisite. FE-200, TACNAV-220, TACNAV-321, DEFTAC-461.

Ordnance. Standard Chaff load (160) and Decoy Flare load (140).

External Syllabus Support. Appropriate aggressor aircraft.

212. INSTRUCTOR TRAINING

1. Flight Engineer Instructor

a. Purpose. Qualify the Flight Engineer as a Flight Engineer Instructor. At the completion of this training the FEI shall be qualified to instruct all Core Introduction, Basic, and Advanced level codes for Flight Engineers and Flight Mechanics. Standardize the Flight Engineer Instructor procedures for CPT/OFT/WST device operation.

b. General

(1) Emphasize standardization and the ability of the Flight Engineer to instruct normal and emergency procedures per the NATOPS Flight Manual.

(2) Upon successful completion of SFAM-504 the Flight Engineer shall be evaluated in flight for qualification, RQD-690, to receive designation as an FEI.

(3) One thousand (1000) flight hours required as a qualified Flight Engineer to begin this stage of qualification.

(4) This phase of training is required for FEI designation. Requirements are NSQ and Core Basic and Core Advanced complete.

c. Crew Requirements. NATOPS minimum crew or greater unless otherwise specified for the event.

d. Simulator Training. (5 Events, 20.0 Hours).

SFAM-500 4.0 E CPT/OFT S

Goal. Familiarize the instructor under training in the proper operation of the device trainers.

Requirement. Instruct IUT on proper set-up and safe operation of device trainer.

Performance Standard. IUT Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. RQD-611, RQD-681, Core Advanced complete.

SFAM-501 4.0 E CPT/OFT S

Goal. Refine device operation.

Requirement. Review FAM-500; IUT will demonstrate proper device operation per current instruction.

Performance Standard. IUT Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. SFAM-500, RQD-611, RQD-681, Core Advanced complete.

SFAM-502 4.0 E CPT/OFT S

Goal. Refine device operation.

Requirement. Review FAM-501; combine device operations with instructional techniques.

Performance Standard. IUT Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. SFAM-500, SFAM-501, RQD-611, RQD-681, Core Advanced complete.

SFAM-503 4.0 E CPT/OFT S

Goal. Refine device operation and instructional techniques.

Requirement. Review FAM-502.

Performance Standard. IUT Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. SFAM-500, SFAM-501, SFAM-502, RQD-611, RQD-681, Core Advanced complete.

SFAM-504 4.0 E CPT/OFT S

Goal. Qualification to operate the device trainer effectively.

Requirement. IUT must demonstrate proper device operation combining instructional technique.

Performance Standard. IUT Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual.

Prerequisite. SFAM-500, SFAM-501, SFAM-502, SFAM-503, RQD-611, RQD-681, Core Advanced complete.

213. REQUIREMENTS, QUALIFICATIONS AND DESIGNATIONS

1. Purpose. To provide a vehicle for tracking codes associated with qualifications and designations.
2. General. "E"-coded sorties are evaluation sorties. "E"-coded sorties in the 600-level phase may be logged in conjunction with any sortie that completes its stage. CRP is not awarded for these 600-level sorties; however, CRP credit may be obtained by logging the appropriate training code(s) in the 200-400 level syllabus. Once the flight to attain the qualification/designation is complete, a letter from the squadron Commanding Officer awarding the qualification/designation shall be placed in the NATOPS and APR before that qualification/designation can be utilized. After the Commanding Officer has designated the Flight Engineer in writing as a Flight Engineer I or a Flight Engineer II, the operations department shall log RQD-681 (Flight Engineer I) and RQD-680 (Flight Engineer II) respectively.
3. Engine Run/Taxi qualifications. Designate the Flight Engineer in engine runs, and taxi procedures. This stage does not require flight time, but does require the use of a KC-130 aircraft for the indicated time. RQD-600 and 601 are to be completed at the discretion of the commanding officer.
4. Ground Training. (2 Events, 2.0 Hours).
5. Flight Training. (1 Event, 2.0 Hours).

RQD-600 0.0 SC,R E 1 KC-130 A

Goal. Evaluate Flight Engineer on engine run procedures.

Requirement. NATOPS Instructor/Evaluator will evaluate Student Flight Engineer High/Low power engine run procedures.

Performance Standard. Qualified per MIMS, applicable NATOPS flight manual, and local course rules and DSS program.

Prerequisite. RQD-680.

RQD-601 0.0 SC,R E 1 KC-130 A
Goal. Evaluate Flight Engineer on taxi procedures.
Requirement. NATOPS Pilot Instructor/Evaluator will evaluate Flight Engineer on taxi procedures.
Performance Standard. Qualified per applicable NATOPS flight manual, 3710.7_ and local course rules.
Prerequisite. RQD-680.

RQD-602 2.0 SC,R E 1 KC-130 A
Goal. Qualify and maintain currency for Flight Engineer proficiency in functional check flight procedures.
Requirement. Conduct an engine run and flight phase inspection upon completion of post maintenance discrepancies. The flight shall include the shutdown and air-start of at least one engine.
Performance Standard. Satisfactorily execute procedures per the NFM, OPNAVINST 3710.7_, and OPNAVINST 4790.2_.
Prerequisite. RQD-680.

6. Night Systems Qualification (NSQ)

- a. Purpose. NSQ qualification.
- b. General. Flight Engineer receiving instruction leading to NSQ in the KC-130 will be qualified in the equivalent day sortie. An NSI crewmember shall conduct this phase of instruction.
- c. Ground Training. MAWTS-1 NVD ASP courses and NITE lab (includes Night Vision Systems, N.S. Human Factors and Night Environment ASPs).
- d. Flight Training. (1 Event, 2.0 Hours).

RQD-611 2.0 E 1 KC-130 A NS
Goal. Night Systems Qualification. Qualify the Flight Engineer in flights involving the utilization of NVDs.
Requirement. The Flight Engineer will demonstrate the ability to perform crew specific duties utilizing NVDs. Flight may be conducted in conjunction with initial TACNAV-224.
Performance Standard. Satisfactorily execute the procedures per NFM, KC-130 TACMAN, TTP (AS REQUIRED), and MAWTS-1 ASP for NSQ.
Prerequisite. Night Lab and MAWTS-1 approved ground course, (NVD-1/NVD-2). NS-204, NS-205, NS-223, NS-224, RQD-681.

7. Flight Engineer Evaluations

a. Purpose. Evaluate the student Flight Engineer per NATOPS procedures.

b. General. Flight Engineer evaluations will be conducted during this phase. Upon successful completion of these stages, the Flight Engineer under instruction shall be designated the appropriate level of qualification. The FE-2 is considered systems qualified but requires supervision by a Flight Engineer Instructor until successful completion of applicable phase of training.

c. Crew Requirements. Minimum crew and Flight Engineer Assistant NATOPS instructor.

d. Flight Training. (6 Events, 24.0 Hours).

RQD-680 4.0 E 1 KC-130 A/S (N)

Goal. FE-2 NATOPS evaluation.

Requirement. NATOPS instructor/evaluator will evaluate student Flight Engineer per NATOPS procedures. Remain overnight (RON) flight is preferred.

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW applicable NATOPS flight manual, 3710.7_, 4790.2_ and associated MIMS.

Prerequisite. All core skill introduction codes.

RQD-681 4.0 R E 1 KC-130 A (N)

Goal. FE-1 NATOPS initial evaluation.

Requirement. NATOPS instructor/evaluator will evaluate Flight Engineer per NATOPS procedures. Remain overnight (RON) flight is preferred. Should be either AR, AD, LL, TLZ, RGR, or combination mission. RON flight is preferred.

Performance Standard. Flight Engineer under instruction shall perform responsibilities/duties IAW applicable NATOPS flight manual, TACMAN, 3710.7_, 4790.2_ and associated MIMS. The Flight Engineer will have the ability to instruct 200 level Flight Mechanic initial codes.

Prerequisite. FAM-200 through FAM-274 except NS codes.

RQD-682 4.0 R E 1 KC-130 A (N)

Goal. Annual NATOPS evaluation and subsequent annual evaluations.

Requirement. NATOPS instructor/evaluator will evaluate Flight Engineer per NATOPS procedures. RON flight is preferred. Should be either AR, AD, LL, TLZ, RGR, or combination mission.

Performance Standard. Flight Engineer under evaluation shall perform responsibilities/duties IAW applicable NATOPS flight manual, TACMAN, 3710.7_, 4790.2_ and associated MIMS.

Prerequisite. Successful completion of NATOPS open and closed books tests IAW NFM.

RQD-683 4.0 R E 1 KC-130 A (N)

Goal. Assistant NATOPS Instructor Designation.

Requirement. NATOPS instructor/evaluator will evaluate Flight Engineer per NATOPS procedures. RON flight is preferred. Should be either AR, AD, LL, TLZ, RGR, or combination mission.

Performance Standard. Flight Engineer under instruction shall perform responsibilities/duties IAW applicable NATOPS flight manual, TACMAN, 3710.7_, 4790.2_ and associated MIMS.

Prerequisite. RQD-611, RQD-681, RQD-690.

RQD-684 4.0 R E 1 KC-130 A (N)

Goal. NATOPS Instructor Designation.

Requirement. Model Manager will evaluate Flight Engineer per NATOPS procedures. RON flight is preferred. Should be either AR, AD, LL, TLZ, RGR, or combination mission.

Performance Standard. Flight Engineer under instruction shall perform responsibilities/duties IAW applicable NATOPS flight manual, TACMAN, 3710.7_, 4790.2_ and associated MIMS.

Prerequisite. RQD-611, RQD-683, RQD-690.

RQD-690 4.0 R E 1 KC-130 A (N)

Goal. Flight Engineer Instructor Designation.

Requirement. NATOPS instructor/evaluator will evaluate Flight Engineer per NATOPS procedures. RON flight is preferred. Should be either AR, AD, LL, TLZ, RGR, or combination mission.

Performance Standard. Flight Engineer under instruction shall perform responsibilities/duties IAW NFM, TACMAN, 3710.7_, 4790.2_ and associated MIMS.

Prerequisite. SFAM-500 through SFAM-504, RQD-681.

8. Night System Instructor (NSI) Certification

a. Purpose. NSI Qualification for Flight Engineer.

b. General. The T&R Program Manual and the MAWTS-1 Course Catalog define the requirements and training requirements for NSI. The completion of the Combat Qualification Phase and Division Leader designation is a prerequisite. The build-up phase may be administered by a squadron NSI,

however a MAWTS KC-130 Instructor shall conduct the certification flight. Upon certification by MAWTS-1, the NSI designation will be assigned by the squadron Commanding Officer.

c. Flight Training. (1 Event, 2.0 Hours), (Refer to MAWTS-1 Course Catalog).

RQD-691 2.0 E 1 KC-130 A NS

Goal. NSI Qualification.

Requirement. Per MATWS-1 Course Catalog.

Performance Standard. Satisfactorily execute the procedures per NFM, KC-130 TACMAN, and TTP (AS REQUIRED), MAWTS-1 ASP for NSI.

Prerequisite. MAWTS-1 ASP for NSI, RQD-611, RQD-681, RQD-690.

7. Weapons and Tactics Instructor (WTI)

a. Purpose. Certify the KC-130 Flight Engineer Instructor as a Weapons and Tactics Instructor capable of safely conducting ground and airborne instruction in the KC-130.

b. General. The KC-130 WTI Course is developed by MAWTS-1 and is conducted in conjunction with the WTI Course. Upon graduation, the candidate will be certified by MAWTS-1 as a WTI crewmember. WTI designation can be made by the squadron commanding officer.

c. Flight Training. (As published in the MAWTS-1 Course Catalog).

RQD-692 E 1 KC-130 A (N)

Goal. Demonstrate proficiency of the instructional skills required to conduct crewmember tactical training.

Requirement. The WTI candidate will plan, brief, instruct, critique and document a crewmember tactical training event in conjunction with a WTI Major Evolution or Final Exercise (FINEX) sortie. The WTI candidate will complete a minimum of three IUT build-up flights in conjunction with specific and common phases of WTI flight phase prior to the certification flight as listed in the MAWTS-1 Course Catalog.

Performance Standards. See MAWTS-1 Course Catalog.

Prerequisites. IAW MAWTS-1 Course Catalog requirements.

214. SYLLABUS MATRIX

AC-130A/130B/130C ENGINEER														
500 SERIES CORE SKILLS INTRODUCTION														
STAGE	TRNG CODE	EVENT DESCRIPTION	FLIGHT HOURS	SIMULATOR HOURS	REFLY INTERVAL	DEVICE	# OF A/C	CONDITIONS	PREREQ	FOI	EVALUATION	CRP	CHAINING	EVENT CONVERSION
SIMULATOR FAMILIARIZATION														
SFAM	100	INTRO		2.0	*	S			GROUND SCHOOL			1.0		100
SFAM	101	INTRO		2.0	*	S			100			1.0		101
SFAM	102	START MALF		2.0	*	S			101			1.0		102
SFAM	103	EMERGENCY MALF		2.0	*	S			102			1.0		103
SFAM	104	PERF CHECK		2.0	*	S			103	R	E	1.0		104
SFAM	105	ENG SYSTEM		2.0	*	S			104			1.0		105
SFAM	106	PROP SYSTEM		2.0	*	S			105			1.0		106
SFAM	107	ELEC SYSTEM		2.0	*	S			106			1.0		107
SFAM	108	PNEU SYSTEM		2.0	*	S			107			1.0		108
SFAM	109	FUEL SYSTEM		2.0	*	S			108			1.0		109
SFAM	110	HYD SYSTEM		2.0	*	S			109			1.0		110
SFAM	111	A/C SYSTEM		2.0	*	S			110			1.0		111
SFAM	112	COMM / NAV		2.0	*	S			111			1.0		112
SFAM	113	AR SYSTEM		2.0	*	S			112			1.0		113
SFAM	114	SIM EVAL		4.0	*	S			113	R	E	2.0		114
			0.0	32.0								16.0		
FLIGHT FAMILIARIZATION														
FAM	115	TURNAROUND	4.0		*	A	1 (N)	114		R		1.0		115
FAM	116	TOLD	4.0		*	A	1 (N)	115		R		1.0		116
FAM	117	W&B	4.0		*	A	1 (N)	116		R		1.0		117
FAM	118	AW OPS	4.0		*	A	1 (N)	117		R		1.0		118
FAM	119	ENG OUT	4.0		*	A	1 (N)	118		R		1.0		119
FAM	120	OW OPS	4.0		*	A	1 (N)	119		R		2.0		120
			24.0	0.0								7.0		
SYSTEM REVIEW														
REV	130	ENG GTC/APU	4.0		*	A	1 D	120				1.0		130
REV	131	ENG SYSTEM	4.0		*	A	1 D	130				1.0		131
REV	132	PROPS	4.0		*	A	1 D	131				1.0		132
REV	133	AC ELEC	4.0		*	A	1 D	132		R		1.0		133
REV	134	DC ELEC	4.0		*	A	1 D	133				1.0		134
REV	135	PNEUMATICS	4.0		*	A	1 D	134				1.0		135
REV	136	A/C PRESS	4.0		*	A	1 D	135				1.0		136
REV	137	FUEL	4.0		*	A	1 D	136				1.0		137
REV	138	UTILITY HYD	4.0		*	A	1 D	137				1.0		138
REV	139	BOOST/AUX	4.0		*	A	1 D	138				1.0		139
REV	140	COMM	4.0		*	A	1 D	139		R		1.0		140
REV	141	NAV/FLT SYSTEM	4.0		*	A	1 D	140		R		1.0		141
REV	142	AR SYSTEM	4.0		*	A	1 D	141		R		1.0		142
			52.0	0.0								13.0		

KC-135RFLY FLIGHT ENGINEER														
100 SERIES CORE SKILL INTRODUCTION														
STAGE	TRNG CODE	EVENT DESCRIPTION	FLIGHT HOURS	SIMULATOR HOURS	REFLY INTERVAL	DEVICE	# OF A/C	CONDITIONS	PREREQ	FOI	EVALUATION	CRP	CHAINING	EVENT CONVERSION
INTERMEDIATE PROGRESS EVALUATION														
CK	150	INTMED EVAL	4.0		*	A	1		COMPLETE FAM/REV	R	E	2.0		150
			4.0	0.0								2.0		
MAINTENANCE GROUND RUNS AND FUNCTIONAL CHECK FLIGHTS														
SMGR	160	INTRO RUNUP		3.0	*	S		D	150			2.0		160
SMGR	161	REFN RUNUP		3.0	*	S		D	160			2.0		161
SFCF	162	INTRO FCF		4.0	*	S		D	161			2.0		162
SFCF	163	REFN FCF		4.0	*	S		D	162			2.0		163
MGR	164	REFN RUNUP	3.0		*	A/S	1	D	163			2.0		164
MGR	165	INTRO TAXI	3.0		*	A	1	D	164			2.0		165
MGRCK	166	RUNUP CHECK	3.0		*	A	1	D	165	R		2.0		166
FCF	167	FCF REV	2.0		*	A	1	D	166	R		2.0		167
			11.0	14.0								16.0		
MISSION FAMILIARIZATION														
MFAM	170	INTRO FWAR	4.0		*	A	1		113,150	R		1.0		170
MFAM	171	REFN FWAR	4.0		*	A	1		170	R		1.0		171
MFAM	172	INTRO HAR	4.0		*	A	1		113,150	R		1.0		172
MFAM	173	INTRO LL	4.0		*	A	1		150	R		1.5		173
MFAM	174	INTRO FORM	4.0		*	A	2		150			1.5		174
			20.0	0.0								5.0		
TOTAL FLT/SIM HOURS FOR STAGE			111.0	46.0								60.0		

AC-130F3 FLIGHT ENGINEER													
200-SERIES CORE SKILL BASIC													
STAGE	TRNG CODE	EVENT DESCRIPTION	FLIGHT HOURS	SIMULATOR HOURS	REFLY INTERVAL	DEVICE	# OF A/C	CONDITIONS	PREREQ	FOI EVALUATION	CRP	CHAINING	EVENT CONVERSION
FAMILIARIZATION													
FE	200	D/N FAM	2.0		90	A/S	1	(N)	680		1.0		200
			2.0	0.0							1.0		
NIGHT SYSTEMS FAMILIARIZATION													
NS	204	HLL NVG FAM	2.0		180	A	1	NS	NVD/ASP, NITE LAB		1.0	200	204
NS	205	LLL NVG FAM	2.0		180	A	1	NS	NVD/ASP, NITE LAB NS-204	R	1.0	200, 204	205
			4.0	0.0							2.0		
AERIAL REPOURING FAMILIARIZATION													
AR	210	DAY FWAR	4.0		365	A/S	1	D	200		1.0	200	210
AR	211	NIGHT FWAR	4.0		365	A/S	1	N	210	R	0.5	200, 210	211
AR	212	DAY HAR	4.0		365	A/S	1	D	200		1.0	200	212
AR	213	NIGHT HAR	4.0		365	A/S	1	N	212	R	0.5	200, 212	213
			16.0	0.0							3.0		
TACTICAL NAVIGATION													
TACNAV	220	DAY LL	2.0		365	A/S	1	D	200	R	0.5	200	220
TACNAV	223	HLL NVG LL	2.0		365	A/S	1	NS	204, 220		1.0	200, 204, 220	223
TACNAV	224	LLL NVG LL	2.0		365	A/S	1	NS	205, 220	R	1.0	200, 205, 220, 223	224
			6.0	0.0							2.5		
AERIAL DELIVERY													
AD	241	DAY AD	2.0		365	A/S	1	D	200		1.0	200	241
AD	242	NIGHT AD	2.0		365	A/S	1	N	204 HLL, 205 LLL, 241	R	1.0	200, 204/205, 241	242
			4.0	0.0							2.0		
LONG RANGE OVER WATER NAVIGATION													
LRNAV	250	LONG RANGE	8.0		365	A/S	1	(N)	200	R	1.0	200	250
			8.0	0.0							1.0		
ASSAULT LANDING ZONE													
ALZ	271	DAY ALZ	2.0		365	A/S	1	D	200	R	0.5	200	271
ALZ	272	HLL NVG ALZ	2.0		365	A/S	1	NS	200, 204, 271		1.0	200, 204, 271	273
ALZ	273	LLL NVG ALZ	2.0		365	A/S	1	NS	200, 204/205, 271	R	1.0	200, 204/205, 271, 272	273
			6.0	0.0							2.5		
RAPID GROUND REPOURING													
RGR	274	D/N RGR	0.0		365	A	1	(N)	200	R	1.0	200	273
			0.0	0.0							1.0		
TOTAL FLT/SIM HOURS FOR STAGE			46.0	0.0				TOTAL CRP FOR STAGE			15.0		

KC-130FRY FLIGHT ENGINEER													
300 SERIES CORE SKILL ADVANCED													
STAGE	TRNG CODE	EVENT DESCRIPTION	FLIGHT HOURS	SIMULATOR HOURS	REFLY INTERVAL	DEVICE	# OF A/C	CONDITIONS	PREREQ	POI EVALUATION	CRP	CHAINING	EVENT CONVERSION
LOW ALTITUDE TACTICS													
TACNAV	321	LAT	3.0		730	A/S	1	D	200,220	R	5.0	200,220	321
			3.0	0.0							5.0		
FORMATION													
FORM	331	D/N FORM	2.0		365	A/S	2	(N)	200	R	5.0		231
			2.0	0.0							5.0		
THREAT REACTION (RADAR)													
THRX (R)	360	RADAR THREAT	3.0		365	A	1	(N)	200,220	R	5.0	200,220,321	261
			3.0	0.0							5.0		
THREAT REACTION (IR) COUNTER TACTICS													
THRX (I)	361	IR THREAT	3.0		365	A	1	(N)	200,220	R	5.0	200,220,321	360
			3.0	0.0							5.0		
TOTAL FLG/SIM HOURS FOR STAGE			11.0	0.0				TOTAL CRP FOR STAGE			20.0		

KC-130FRY FLIGHT ENGINEER													
400 SERIES CORE SKILL PLUS													
STAGE	TRNG CODE	EVENT DESCRIPTION	FLIGHT HOURS	SIMULATOR HOURS	REFLY INTERVAL	DEVICE	# OF A/C	CONDITIONS	PREREQ	POI EVALUATION	CRP	CHAINING	EVENT CONVERSION
AERIAL DELIVERY													
AD	442	HALO	2.0		*	A/S	1	(N)	200,241	R	1.5	200,241	442
AD	444	BI	2.0		*	A/S	1	N	200,204/205	R	1.5	200,204/205,241,242	444
			4.0	0.0							3.0		
DEFENSIVE TACTICS													
DEFTAC	461	INTRO DEF	2.0		*	A	1	D	200,220,321		1.0	200,220,321	461
DEFTAC	462	REFINE DEF	2.0		*	A	1	D	200,220,321,461	R	1.0	200,220,321,461	462
			4.0	0.0							2.0		
TOTAL FLG/SIM HOURS FOR STAGE			8.0	0.0				TOTAL CRP FOR STAGE			5.0		

4C-130FAT FLIGHT ENGINEER													
500 SERIES INSTRUCTOR TRAINING													
STAGE	TRNG CODE	EVENT DESCRIPTION	FLIGHT HOURS	SIMULATOR HOURS	REFLY INTERVAL	DEVICE	# OF A/C	CONDITIONS	PREREQ	POI EVALUATION	CRP	CHAINING	EVENT CONVERSION
SFAM	500	INTRO SIM	4.0		S	D		611,681,Core Adv complete		E	0.0		500
SFAM	501	REFINE SIM	4.0		S	D		500,611,681, Core Adv complete		E	0.0		501
SFAM	502	REFINE SIM	4.0		S	D		500,501,611,681, Core Adv complete		E	0.0		502
SFAM	503	REFINE SIM	4.0		S	D		500,501,502,611,681, Core Adv complete		E	0.0		503
SFAM	504	SIM QUAL	4.0		S	D		500,501,502,503,611,681, Core Adv complete		E	0.0		504
TOTAL FLT/SIM HOURS FOR STAGE			0.0	20.0									0.0
TOTAL CRP FOR STAGE			0.0										

4C-130FAT FLIGHT ENGINEER													
600 SERIES REQUIREMENTS / QUALIFICATIONS / DESIGNATIONS													
STAGE	TRNG CODE	EVENT DESCRIPTION	FLIGHT HOURS	SIMULATOR HOURS	REFLY INTERVAL	DEVICE	# OF A/C	CONDITIONS	PREREQ	POI EVALUATION	CRP	CHAINING	EVENT CONVERSION
ENGINE RUN/TAXI QUALIFICATION													
RQD	600	RUNUP DESIGNATION	0.0			A	1	680		SC,R	E	0.0	
RQD	601	TAXI DESIGNATION	0.0			A	1	680		SC,R	E	0.0	
RQD	602	FCF DESIGNATION	2.0			A	1	D 680		SC,R	E	0.0	602
			4.0	0.0									0.0
NIGHT SYSTEM QUALIFICATION													
RQD	611	NSQ	2.0			A		NS NIGHT LAB,ASP NVD-1 NVD-2, 204,205,223,224,681		E	0.0		611
			2.0	0.0									0.0
FLIGHT ENGINEER EVALUATIONS													
RQD	680	FE-2 DESIGNATION	4.0			365	A	1 (N)	CORE SKILL INTRO COMPLETE		E	0.0	680
RQD	681	FE-1 DESIGNATION	4.0			365	A	1 (N)	200-274,EXCEPT NS CODES	R	E	0.0	680 681
RQD	682	ANNUAL NATOPS	4.0			365	A	1 (N)	681,NATOPS OPEN CLOSED COMPLETE	R	E	0.0	680 681
RQD	683	ANI	4.0			365	A	1 (N)	611,681,690	R	E	0.0	683
RQD	684	NI	4.0			365	A	1 (N)	611,683,690	R	E	0.0	683
RQD	690	FEI	4.0				A	1 (N)	500-504,681	R	E	0.0	690
			24.0	0.0									0.0
NIGHT SYSTEM INSTRUCTOR CERTIFICATION													
RQD	691	NSI	2.0				A	1 NS	ASP,611,681,690		E	0.0	691
			2.0	0.0									0.0
WEAPONS AND TACTICS INSTRUCTOR													
RQD	692	WTI	0.0						MAWTS-1 COURSE CATALOG		E	0.0	692
			2.0	0.0									0.0
TOTAL FLT/SIM HOURS FOR STAGE			32.0	0.0									0.0
TOTAL CRP FOR STAGE			0.0										

CHAPTER 3

TACTICAL SYSTEMS OPERATOR (TSO)/MISSION SPECIALIST

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*** * NOTE * ***

Crew Resource Management shall be briefed before all flights and/or events.

CHAPTER 3

TACTICAL SYSTEMS OPERATOR (TSO)/MISSION SPECIALIST

300. MARINE AERIAL REFUELING SQUADRON (KC-130FRT) UNIT CORE COMPETENCY

1. Background. Marine Aviation plays a crucial role in the MAGTF's ability to conduct Maneuver Warfare. The ultimate goal of Marine Aviation is to attain the highest possible combat readiness to support Expeditionary Maneuver Warfare while at the same time preserving and conserving our Marines and equipment. Embedded within our combat readiness is the ability to rapidly, effectively, and efficiently deploy on short notice and the ability to quickly and effectively plan for crises and/or contingency operations thereby ensuring Marine Aviation remains ready for combat when and where the need arises. The KC-130FRT T&R Manual represents the collaborative effort of KC-130FRT Subject Matter Experts who designed training standards to maximize the full combat capabilities of the KC-130FRT and its crew. These standards, intrinsic in the core competency section, describe and define unit capabilities and requirements necessary to maintain like-squadron proficiency in core skills and combat leadership. Training events are based on specific requirements and performance standards to ensure aircrew maintain a common base of training and depth of combat capabilities. Together, the T&R comprises a building block approach to ensure that trained aircrews remain ready, relevant, and fully capable of supporting the MAGTF commander.

2. VMGR Mission. Support the MAGTF Commander by providing aerial refueling and assault support, day or night under all weather conditions during expeditionary, joint, or combined operations.

3. Mission Essential Task List (METL)

- a. (UJTL TA 1.1.1) Conduct Tactical Airlift
 - Conduct assault support transport.
- b. (UJTL TA 1.1.4) Conduct Sea and Air Deployment Operations
 - Maintain the capability to deploy and operate from advanced bases, expeditionary airfields and forward operating bases.
 - Perform organizational maintenance on assigned aircraft.
- c. (UJTL TA 1.2.2) Conduct Airborne Operations
 - Provide air delivered assault support transport of combat troops, equipment and supplies.
 - Provide support for casualty evacuation operations.
 - Maintain self-defense capability from ground-to-air and air-to-air threats.
- d. (UJTL TA 4.2) Distribute Supplies and Provide Transport Services
 - Conduct aerial re-supply.
 - Provide support for mobile Forward Arming and Refueling Points (FARPS).
 - Provide support for Rapid Ground Refueling (RGR) of aircraft and vehicles.

- e. (UJTL TA 4.2.3) Conduct Air Refueling
 - Provide Tactical and Long-range Aerial Refueling.
- f. (UJTL TA 5) Exercise Command and Control
 - Provide Airborne Platform for the Airborne DASC Command Post.
- g. (UJTL TA 6.2) Conduct Joint Personnel Recovery
 - Conduct Tactical Recovery of Aircraft and Personnel (TRAP) operations.
 - Augment local Search and Rescue (SAR) assets
- h. (UJTL TA 6.4) Conduct Noncombatant Evacuation
 - Provide support for evacuation operations.

4. Table of Organization. Refer to Table of Organization 8820 and 8821 managed by Total Force Structure, MCCDC, for current authorized organizational structure and personnel strength for KC-130FRT units. As of this publication date, KC-130F/R/T units are authorized:

Squadron
12 Aircraft
42 Pilots [26 TPC/16 CP (T2P or T3P)]
23 TSOs
25 Flight Engineers
24 Loadmasters
24 Flight Mechanics

Detachment
6 Aircraft
19 Pilots [11 TPC/8 CP (T2P or T3P)]
11 TSOs
12 Flight Engineers
12 Loadmasters
12 Flight Mechanics

5. Core Capability. A core capable squadron is able to sustain 9 sorties on a daily basis during contingency/combat operations. The above sortie rates are based on 3.0 hour average sortie duration and assumes \geq 70 percent FMC aircraft and \geq 90 percent T/O aircrew on hand. If unit FMC aircraft $<$ 70 percent or T/O aircrew $<$ 90 percent, core capability will be degraded by a like percentage. A core capable squadron is able to accomplish all tasks designated in the unit METL from a main or expeditionary base.

6. METL/Core Skill Matrix. KC-130FRT core skills directly support the METL as follows:

KC-130FRT CORE SKILLS													
METL	FAI	NSQ	AR	TACNAV	FORM	MULTI PLANE AR	AD	LRNAV	THRX (I)	THRX (R)	ALZ	CPL	RGR
A. Conduct Tactical Airlift	X	X		X	X			X	X	X	X	X	
B. Conduct Sea and Air Deployment Operations	X	X			X			X	X	X	X	X	
C. Conduct Airborne Operations	X	X		X	X		X	X	X	X		X	
D. Distribute Supplies and Provide Transport Services	X	X		X			X	X	X	X	X	X	X
E. Conduct Air Refueling	X	X	X	X	X	X		X	X	X			
F. Exercise Command and Control	X	X						X	X	X		X	
G. Conduct Joint Personnel Recovery	X	X	X	X	X	X	X	X	X	X	X	X	X
H. Conduct Noncombatant Evacuation	X	X	X	X	X	X		X	X	X	X	X	X

KC-130FRT CORE PLUS SKILLS					
METL	TACNAV	FORM	AD	DEFTAC	AR
A. Conduct Tactical Airlift	X	X		X	
B. Conduct Sea and Air Deployment Operations		X		X	X
C. Conduct Airborne Operations	X	X	X	X	
D. Distribute Supplies and Provide Transport Services	X		X	X	X
E. Conduct Air Refueling	X	X		X	X
F. Exercise Command and Control				X	
G. Conduct Joint Personnel Recovery	X	X	X	X	X
H. Conduct Noncombatant Evacuation	X	X		X	X

7. KC-130F/R/T Core Model Minimum Requirements. Squadron core competency reflects the minimum level of competency a squadron must achieve to perform its core capability. Squadron core competency is measured in terms of minimum Core Skill Proficiency (CSP) and minimum numbers of flight leaders per paragraphs a. and b. below:

a. Minimum Unit CSP Requirements. As a minimum, in order to be considered Core Competent, a unit must possess the following numbers of crews who are proficient in each core skill (Unit CSP). In order to be considered proficient in a core skill (individual CSP), a crewmember must attain and maintain proficiency in core skill events, as delineated in paragraphs (1) and (2) below.

- NOTE: DEFTAC and Long-range AAR (LRAR) are core plus skills. Proficiency in DEFTAC and LRAR is not required to obtain unit CSP and will not contribute to unit T-level readiness. Below are KC-130 community recommended unit/individual CSP standards for these skills.

KC-130FRT CSP Requirements							
Unit							
CORE SKILL CORE PLUS	Pilot	Copilot	TSO	FE	LM	FM	Crews
FAI	14	14	14	14	14	14	14
NS	9	9	9	9	9	9	9
AR	14	14	14	14	14	14	14
TACNAV	9	9	9	9	9	9	9
FORM	8	8		8			8
MULTI-PLANE AR	4	4					4
AD	4	4	4	4	8	4	4
LRNAV	12	12	12	12	12	12	12
THR(X)(I)	6	6	6	6	6	6	6
THR(X)(R)	4	4	4	4			4
ALZ	9	9	9	9	9	9	9
CPL					18		18
RGR				8	8	8	8
TACNAV	2	2					2
FORM	2	2					2
AD	4	4	4	4	8	4	4
DEFTAC	2	2	2	2	2	2	2
AR	2		2				2

KC-130FRT CSP Requirements 6 Plane Detachment							
CORE SKILL CORE PLUS	Pilot	Copilot	TSO	FE	LM	FM	Crews
FAI	7	7	7	7	7	7	7
NS	5	5	5	5	5	5	5
AR	7	7	7	7	7	7	7
TACNAV	5	5	5	5	5	5	5
FORM	4	4		4			4
MULTI-PLANE AR	2	2					2
AD	2	2	2	2	4	2	2
LRNAV	6	6	6	6	6	6	6
THR(X)(I)	3	3	3	3	3	3	3
THR(X)(R)	2	2	2	2			2
ALZ	5	5	5	5	5	5	5
CPL					9		9
RGR				4	4	4	4
TACNAV	2	2					2
FORM	2	2					2
AD	2	2	2	2	4	2	2
DEFTAC	1	1	1	1	1	1	1
AR	2		2				2

** CPL is the Cargo and Passenger Loading core skill that applies to loadmasters only and is not included in the METL Core Skill Matrix.

(1) Events Required to Attain Individual CSP. To initially attain CSP, a crewmember must successfully complete all of the T&R events listed in the chart below for that core skill:

KC-130FRT TSO Core Skills	FAM	NS	RW/FW AR	TAC NAV	AD	LONG RANGE NAV	THR(X) (I)	ALZ	THR(X) (R)
Events required to Attain CSP	201R	204R 205R	210R 212 213R	S220 221 S222 323 321 322R 324R	S240 241 242 341R	250R	S260 261R	S270 271R 370R	S360 361R

KC-130FRT TSO Core + Skills	AF	AD	DEFTAC
Events required to Attain Core + Proficiency	410 411R	441 442R 444R	462R

(2) Events Required to Maintain Individual CSP. To maintain CSP, a crewmember must maintain proficiency in all of the T&R events listed in the chart below for that core skill.

KC-130FRT TSO Core Skills	FAM	NS	RW/FW AR	TAC NAV	AD	LONG RANGE NAV	THR(X) (I)	ALZ	THR(X) (R)
Events required to Maintain CSP	201R	204R 205R	210R 213R	322R 324R	341R	250R	261R	271R 370R	361R

KC-130FRT TSO Core + Skills	AR	AD	DEFTAC
Events required to Maintain Core + Proficiency	411R	442R 444R	462R

b. Minimum Combat Leader Requirements. As a minimum, in order to be considered Core Competent, a unit must possess the following numbers of aircrew with the listed flight leadership designations.

KC-130 Leadership Requirements - Squadron						
DESIGNATION	Pilot	Tactical Systems Operator	Flight Engineers	Loadmasters	Flight Mechanics	
TPC	18					
SEC LDR	8					
DIV LDR	4					
TAC RAC	8					
RC		2				
STRAT RAC	2					

KC-130 Leadership Requirements - Detachment						
DESIGNATION	Pilots	Tactical Systems Operator	Flight Engineers	Loadmasters	Flight Mechanics	
TPC	9					
SEC LDR	4					
DIV LDR	2					
TAC RAC	4					
RC		1				
STRAT RAC	1					

8. Qualifications And Designations Table. The table below delineates T&R events required to be completed to attain initial qualifications, re-qualifications, and designations. All stage lectures, briefs, squadron training and prerequisites shall be complete prior to completing final events. Qualification and designation letters signed by the commanding officer shall be placed in individual NATOPS and APR/MPR jackets. Loss of proficiency in all qualification events of a core skill causes the associated qualification to be lost. Regaining a qualification requires completing all R coded syllabus events associated with that qualification.

<u>Qualification</u> (TRACKING CODE)	Initial Event Qualification Requirements.
NSQ (600)	NSFAM-204, NSFAM-205
ANNUAL NATOPS (690)	IAW OPNAVINST 3710.7 and an annual qualification letter signed by the commanding officer.
<u>Designation</u> (TRACKING CODE)	Initial Event Qualification Requirements.
TSOI (601)	TSOIUT 500, 501, 502 and squadron's recommendation for instructor designation.
NSI (602)	NSIUT 510, 511, 512 and MAWTS-1 certification.
RENDEZVOUS CONTROLLER (610)	AR-410, AR-411
Weapons and Tactics Instructor (691)	Completion of WTI Course of instruction and MAWTS-1 certification.
NATOPS Instructor (692)	RQD-601 and squadron's recommendation for NATOPS evaluator designation.

9. Instructor Requirements. A squadron should possess the following numbers of aircrew with the listed instructor designations per the KC-130 T&R and MCO 3500.12C (WTTP).

KC-130 Squadron						
INSTRUCTOR DESIGNATION	Pilots	Tactical System Operators	Flight Engineers	Loadmasters	Flight Mechanics	
LATI	4					
ANI	6	4	6	4		
WTI	2	2	2	2		
DEFTACI	1					
NSI	3	3	3	3		
T&RI	10	6	10	8		

KC-130 Detachment						
INSTRUCTOR DESIGNATION	Pilots	Tactical System Operators	Flight Engineers	Loadmasters	Flight Mechanics	
LATI	2					
ANI	3	2	3	2		
WTI	1	1	1	1		
DEFTACI	1					
NSI	1	1	1	1		
T&RI	5	3	5	4		

10. Definitions

a. Currency. A control measure used to provide an additional margin of safety based on exposure frequency to a particular skill. It is a measure of time since the last event demanding that specific skill. Loss of currency does not affect a loss of Combat Readiness Percentage (CRP). For example, currency determines minimum altitudes in rules of conduct based upon the most recent low altitude fly date. Specific currency requirements for individual type mission profiles may be found in the Aviation T&R Program Manual.

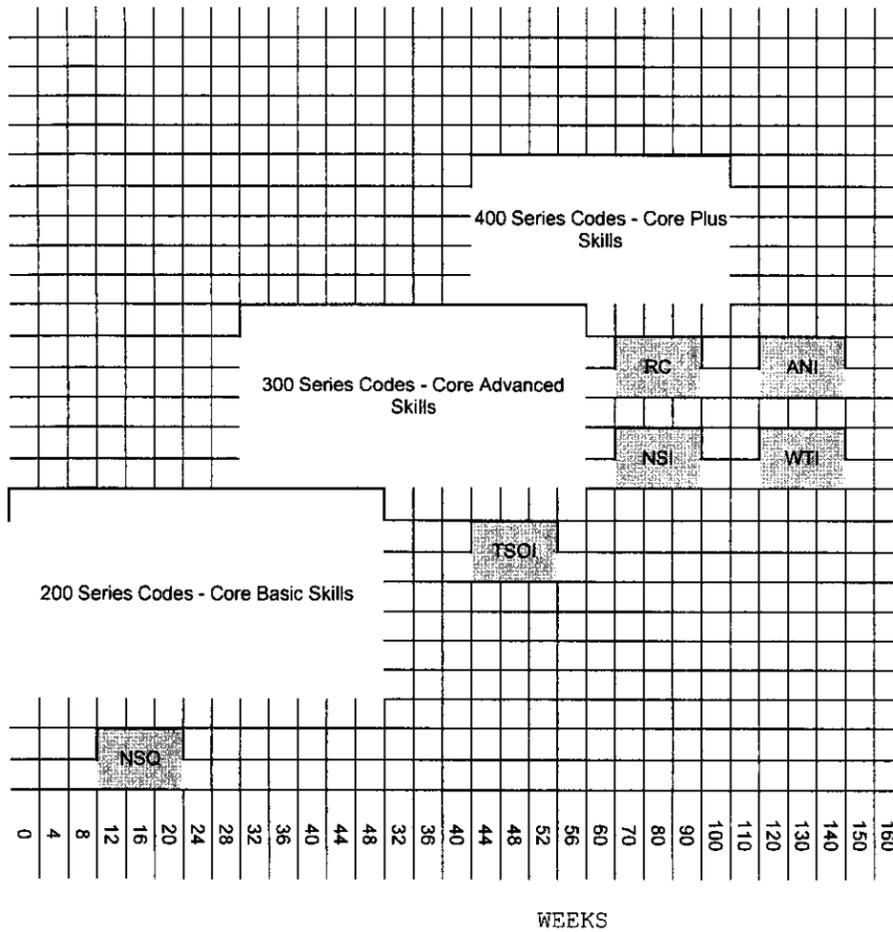
b. Proficiency. Proficiency is a measure of achievement of a specific skill. Re-fly factors establish the maximum time between demonstration of those particular skills. CRP is a measurement of "demonstrated proficiency." If an aircrew exceeds the re-fly factor for a particular event, the individual loses CRP for that particular event. To regain proficiency, an individual shall complete the delinquent event with a proficient crewman/flight lead. If an entire unit loses proficiency, unit instructors shall regain proficiency by completing an event with instructors from a like unit. If not feasible, the instructor shall regain proficiency by completing the event with another instructor. If a unit has only one instructor and cannot complete the event with an instructor from another unit, he shall regain proficiency with another aircraft commander or as designated by his commanding officer.

c. Qualification. A qualification is a status assigned to personnel based on demonstration of proficiency in a specific skill. Specific criteria to achieve qualifications shall be delineated in individual T&R chapters. Upon successful completion of qualification criteria, commanding officers may issue an appropriate qualification letter for inclusion in the NATOPS jacket and APR/MPR. Aircrew do not lose a qualification as a function of re-fly factor for individual events. Loss of proficiency (delinquent re-fly factor) for all associated qualification core skill events constitutes loss of that qualification. Re-qualification requires demonstration of proficiency. Specific re-qualification criteria shall be delineated in individual T&R chapters.

d. Designation. A designation is a status assigned to an individual based on leadership ability. A designation is a command specific, one-time occurrence and remains in effect until removed for cause. Specific designation requirements shall be delineated in individual T&R chapters. Commanders shall issue a designation letter to the individual upon the occasion of original designation, with appropriate copies for inclusion in the NATOPS jacket and APR.

11. KC-130FRT TSO Progression Model. The training progression model below provides recommended core skill, qualification, and designation attainment timelines.

**KC-130 TACTICAL SYSTEMS OPERATOR (TSO)/MISSION
SPECIALIST NOTIONAL PROGRESSION MODEL**



301. PROGRAMS OF INSTRUCTION (POI) FOR BASIC TSO

<u>WEEKS</u>	<u>COURSE/PHASE</u>	<u>ACTIVITY</u>
1-2	Squadron Ground Training	Tactical Squadron
3-48	Core Skill Basic Training	Tactical Squadron
32-56	Core Skill Advanced Training	Tactical Squadron
44-100	Core Plus Training	Tactical Squadron

302. POI FOR REFRESHER TSO

<u>WEEKS</u>	<u>COURSE/PHASE</u>	<u>ACTIVITY</u>
1	Squadron Ground Training	Tactical Squadron
2-12	Core Skill Basic Training	Tactical Squadron

310. GROUND TRAINING COURSES OF INSTRUCTION

<u>COURSE/PHASE</u>	<u>ACTIVITY</u>
Naval Aircrew Candidate Course	NAS Pensacola, FL
Survival, Evasion, Resistance and Escape School	NAS Brunswick, ME
Central Altitude Reservation Facility	
Indoctrination ARTCC Facility	Washington, D.C.
Weapons Tactics Instructor (WTI)	MAWTS-1, MCAS Yuma, AZ
Advanced Airlift Tactics Training Course	St Joseph, MO
Combat Air Platform Employment Seminar (CAPES)	Nellis AFB, NV

311. SQUADRON LEVEL TRAINING

Aircraft, Emergency Equipment, and Emergency Procedures Familiarization
Foreign Clearance Guide Review
Mission Planning and Fuel Requirements Review
Radio Navigation and Flight Instruments and RADAR Techniques Review
Aerial Refueling Review
Low-level Navigation Techniques Review
Computer Mission Planning Systems
TSO's Responsibility During Ground/Airborne Emergencies
NATOPS Open Book Examination
NATOPS Closed Book Examination

320. FLIGHT TRAINING. The number of hours depicted in the flight training syllabus is considered to be the optimum instructional hours necessary to accomplish training objectives for each flight.

330. EVENT PERFORMANCE REQUIREMENTS

1. Route Selection. Route selection should offer maximum variations in en route conditions.
2. Crew Seat. The trainee is required to occupy the TSO position in the flight station on all syllabus training flights.
3. Refly Intervals. Syllabus reflay intervals are located the syllabus matrix. A TSO returning from a DIFDEN tour exceeding 12 months should complete the Refresher syllabus.
4. Crew Resource Management (CRM). A qualified and designated CRM Instructor shall conduct initial CRM Training. Annual CRM Training shall be conducted per OPNAVINST 1542.7. CRM shall be briefed for all flights and/or events.
5. Simulator Training. Approved IFARS WST simulators are contained in OPNAVINST 3710.7. If an approved simulator is not available, then the simulator events are not required for stage training completion.
6. Event Conditions. Flights annotated with N shall be flown at night using available NVDs or flown unaided. Flights annotated with (N) may be flown day or night; if at night, available NVDs may be used or flown unaided. Flights annotated with NS shall be flown at night using NVDs. Flights annotated with (NS) may be flown day or night; if at night, available NVDs shall be used. Flights annotated with N* shall be flown at night unaided. Flights annotated with (N*) may be flown at night; if at night, shall be flown unaided.

331. CORE SKILL INTRODUCTION TRAINING

1. General. This phase of training is not applicable to TSOs as there is no future requirement to train new TSOs. All current TSOs have completed the one-time training requirements included in this phase of training.

332. CORE SKILL BASIC TRAINING

1. General

a. This phase of instruction covers basic core skills to include: FAM, NSQ, AR, TACNAV, AD, LRNAV, THRX(I), and ALZ.

b. The TSO under instruction shall receive the appropriate MAWTS-1 Course Catalog Academic Support Package (ASP) lectures prior to the appropriate stage of training.

c. For AR-210, AR-213, and ALZ-271, a TSO NSI is required only if the initial sortie is conducted using NVDs and the TSO under instruction is not NSQ. A TSOI who is NSQ may instruct an NSQ TSO on initial AR-210, AR-213, and ALZ-270 events flown using NVDs. Any TSOI may instruct these events during the day or unaided.

d. All instructors must be proficient in the event to instruct.

e. To fly an event aided without an instructor, the TSO must be NSQ and proficient in the given event.

2. Familiarization

a. Purpose. This stage of training will familiarize the TSO with local squadron procedures and introduce the TSO to the use and wear of NVDs.

b. General. Emphasize planning, briefing, pre-flight procedures, and CRM.

c. Ground Training. None.

d. Flight Training (3 Flights, 10.0 Hours)

FAM-201 4.0 R 1 KC-130 A (N)

Goal. Introduce the TSO to local area and squadron operating procedures.

Requirement. Execute a local flight, concentrating on local course rules procedures per station orders, squadron and TSO SOPs.

Performance Standard. Per local and squadron directives, NATOPS, FLIP, and ICAO procedures.

Prerequisite. The TSO will review the squadron and TSO SOPs prior to this flight and shall successfully complete a local course rules examination.

NSFAM-204 3.0 R 1 KC-130 A NS

Goal. Introduce the TSO to the use and wear of NVDs under High Light Level (HLL) conditions with emphasis on NVD pre-flight, in-flight donning, and CRM.

Requirement. The TSO will plan and fly a non-tactical NVD sortie under HLL conditions. The TSO shall be introduced to: NVD emergency procedures, proper NVD scanning techniques, terrain recognition, atmospheric impact on NVD performance, and visual acuities associated with HLL conditions. A pilot NSI, a flight engineer NSI, or a TSO NSI may instruct this sortie.

Performance Standard. Demonstrate the ability to function as a TSO per NATOPS utilizing NVDs under HLL.

Prerequisite. FAM-201. Must complete Night Lab and complete NVD I and NVD II MAWTS-1 ASPs.

NSFAM-205 3.0 R 1 KC-130 A NS

Goal. Introduce the TSO to the use and wear of NVDs under Low Light Level (LLL) conditions with emphasis on NVD pre-flight, in-flight donning, and CRM.

Requirement. The TSO will plan and fly a non-tactical NVD sortie under LLL conditions. The TSO shall refine proper NVD scanning techniques, be introduced to terrain recognition, atmospheric impact on NVD performance, and visual acuities associated with LLL conditions. A pilot NSI, a flight engineer NSI, or a TSO NSI may instruct this sortie.

Performance Standard. Demonstrate the ability to function as a TSO per NATOPS utilizing NVDs under LLL conditions.

Prerequisite. NSFAM-204.

3. Aerial Refueling

a. Purpose. To develop the TSO's knowledge, understanding, and proficiency required for the various types of air-to-air refueling missions.

b. General

(1) Aircraft should have an operating APX, UHF/DF, A/A TACAN, and weather RADAR.

(2) For AR-210 and AR-213, a TSO NSI is required only if the initial sortie is conducted using NVDs and the TSO under instruction is not NSQ. A TSOI who is NSQ may instruct a NSQ TSO on initial AR-210 and AR-213 events flown using NVDs. Any TSOI may instruct these events during the day or unaided.

c. Ground Training. The TSO will review air-to-air refueling procedures in the NATOPS and the Air-to-Air Refueling (AAR) Manual.

d. Flight Training (3 Flights, 6.0 Hours)

- AR-210 2.0 R 1 KC-130 A (N)
- Goal. Refine skills required to plan, brief, and execute a fixed wing/tilt rotor air-to-air refueling mission.
- Requirement. Perform TSO duties on a fixed wing/tilt rotor air-to-air-refueling mission per NATOPS. A TSO NSI is required only if the initial sortie is conducted using NVDs and the TSO under instruction is not NSQ. A TSOI who is NSQ may instruct a NSQ TSO on the initial event flown using NVDs. Any TSOI may instruct these events during the day or unaided.
- Performance Standard. Arrive at an ARCP at ARCT (+/- 1 min) and maintain aircraft position within assigned refueling airspace.
- Prerequisite. FAM-201.
- External Syllabus Support. Fixed wing/tilt rotor receivers required.
- AR-212 2.0 1 KC-130 A
- Goal. Refine skills required to plan, brief, and execute a day rotary wing air-to-air refueling mission.
- Requirement. Perform TSO duties on a day rotary wing air-to-air refueling mission.
- Performance Standard. Locate the receiver using RADAR, APX, UHF/DF, and/or A/A TACAN. Conduct a minimum of two (2) head-on offset and one (1) running, enroute rendezvous.
- Prerequisite. FAM-201.
- External Syllabus Support. Rotary wing receivers required.
- AR-213 2.0 R 1 KC-130 A (N)
- Goal. Introduce skills required to plan, brief, and execute a night rotary wing air-to-air refueling mission.
- Requirement. Perform TSO duties on a night rotary wing air-to-air refueling mission. A TSO NSI is required only if the initial sortie is conducted using NVDs and the TSO under instruction is not NSQ. A TSOI that is NSQ may instruct a NSQ TSO on the initial event flown using NVDs.
- Performance Standard. Locate the receiver using RADAR, APX, UHF/DF, and/or A/A TACAN. Conduct a minimum of two (2) head-on offset and one (1) running, enroute rendezvous.
- Prerequisite. AR-212.
- External Syllabus Support. Rotary wing receivers required.

4. Tactical Navigation

- a. Purpose. To develop the TSO's knowledge and proficiency in tactical navigation.

b. General. Emphasize: computer-based mission planning systems, RADAR terrain mapping, terrain masking, threat avoidance, time, and course control.

c. Ground Training. The TSO will review the appropriate KC-130 TACMAN chapters on low-level and low altitude tactics operations.

d. Flight and Simulator Training (2 Flights, 4.0 Hours/2 Sims, 4.0 Hours)

TACNAV-220 2.0 WST S

Goal. Refine skills required to plan, brief, and execute a tactical low-level sortie.

Requirement

- (1) Perform TSO duties on a tactical low-level sortie.
- (2) Review route planning and chart preparation procedures emphasizing checkpoint selection, use of intermediate checkpoints, limiting features, prominent terrain features, and airspace control measures.
- (3) Conduct a route brief.
- (4) Navigate along a low-level route consisting of a minimum of six (6) pre-selected checkpoints integrating all available navigation aids.
- (5) Discuss CRM considerations during tactical operations.

Performance Standard. Maintain aircraft position within route width and arrive at a pre-selected checkpoint within +/- 30 seconds of a pre-determined TOT.

Prerequisite. FAM-201.

TACNAV-221 2.0 1 KC-130 A

Goal. Refine skills required to plan, brief, and execute a tactical, low-level sortie.

Requirement

- (1) Perform TSO duties on a tactical, low-level sortie.
- (2) Review route planning and chart preparation procedures emphasizing checkpoint selection, use of intermediate checkpoints, limiting features, prominent terrain features, and airspace control measures.
- (3) Conduct a route brief.
- (4) Navigate along a low-level route consisting of a minimum of six (6) pre-selected checkpoints integrating all available navigation aids.
- (5) Discuss CRM considerations during tactical operations.

Performance Standard. Maintain aircraft position within route width and arrive at a pre-selected checkpoint within +/- 30 seconds of a pre-determined TOT.

Prerequisite. FAM-201 and TACNAV-220.

TACNAV-222

2.0 WST S NS

Goal. Introduce skills required to plan, brief, and execute a HLL night systems, tactical, low-level sortie.

Requirement

- (1) Perform TSO duties under HLL conditions on a tactical, low-level sortie.
- (2) Introduce the tactical advantages and administrative restrictions associated with HLL conditions.
- (3) Review route planning and chart preparation procedures emphasizing checkpoint selection, use of intermediate checkpoints, limiting features, prominent terrain features, and airspace control measures during HLL conditions.
- (4) Conduct a route brief.
- (5) Navigate along a low-level route consisting of a minimum of six (6) pre-selected checkpoints integrating all available navigation aids.
- (6) Discuss CRM considerations during tactical operations.

Performance Standard. Maintain aircraft position within route width and arrive at a pre-selected checkpoint within +/- 30 seconds of a pre-determined TOT.

Prerequisite. NSFAM-204, TACNAV-220.

TACNAV-223

2.0 1 KC-130 A NS

Goal. Introduce skills required to plan, brief, and execute a HLL night systems, tactical, low-level sortie.

Requirement

- (1) Perform TSO duties under HLL conditions on a tactical, low-level sortie.
- (2) Introduce the tactical advantages and administrative restrictions associated with HLL conditions.
- (3) Review route planning and chart preparation procedures emphasizing checkpoint selection, intermediate checkpoints, limiting features, prominent terrain features, and airspace control measures during HLL conditions.
- (4) Conduct a route brief.

(5) Navigate along a low-level route consisting of a minimum of six (6) pre-selected checkpoints integrating all available navigation aids.

(6) Discuss CRM considerations during tactical operations.

Performance Standard. Maintain aircraft position within route width and arrive at a pre-selected checkpoint within +/- 30 seconds of a pre-determined TOT.

Prerequisite. NSFAM-204 and TACNAV-222.

5. Aerial Delivery

a. Purpose. To instruct the TSO in aerial delivery techniques. At the end of this stage the TSO will be able to compute an air delivery release point, understand all checklists and time warnings, and call the airdrop.

b. General. Initial instruction should be conducted by a WTI or ANI. Initial events shall be flown in the day.

c. Ground Training. The TSO shall review the TACMAN chapter pertaining to aerial delivery and receive instruction on Computed Air Release Point (CARP) computations per Air Force Instruction (AFI) 11-231.

d. Flight and Simulator Training (2 Flights, 3.0 Hours/1 Sim, 1.5 Hours)

AD-240

1.5

WST S

Goal. Introduce air delivery techniques and navigation procedures to release points in connection with static-line personnel and cargo aerial delivery.

Requirement

(1) Perform TSO duties on an aerial delivery sortie.

(2) Review route planning and chart preparation procedures emphasizing release point computation, aerial delivery limitations, drop zone criteria, aerial delivery checklists and emergency procedures, slow-down procedures, and ingress/egress options.

(3) Plan a route to a drop zone and compute a static-line, CDS, and a HE CARP.

(4) Conduct an objective area brief to include planned release point, drop zone hazards, IP inbound, slow-down, and egress.

(5) Navigate to a drop zone, relay all time warnings, call a static-line personnel, a CDS and an HE aerial delivery, and navigate an egress route.

(6) Discuss CRM considerations during aerial delivery operations.

Performance Standard. Must compute and execute a static-line personnel, a CDS, and an HE aerial delivery that lands within drop zone safety criteria.

Prerequisite. FAM-201.

AD-241

1.5 1 KC-130 A (NS)

Goal. Refine air delivery techniques and navigation procedures to release points in connection with cargo aerial delivery.

Requirement

- (1) Perform TSO duties on a cargo aerial delivery sortie.
- (2) Review route planning and chart preparation procedures emphasizing release point computation, aerial delivery limitations, drop zone criteria, aerial delivery checklists, emergency procedures, slow-down procedures, and ingress/egress options.
- (3) Plan a route to a drop zone and compute a CDS and an HE CARP.
- (4) Conduct an objective area brief to include planned release point, drop zone hazards, IP inbound, slow-down, and egress.
- (5) Navigate to a drop zone, relay all time warnings, call a CDS or HE aerial delivery, and navigate an egress route.
- (6) Discuss CRM considerations during aerial delivery operations.

Performance Standard. Must compute and execute a CDS or HE aerial delivery that lands within drop zone safety criteria.

Prerequisite. AD-240.

External Syllabus Support. Aerial Delivery Platoon or equivalent, material handling equipment and support personnel, a DZ team to include a corpsman, and a drop zone survey per MCO 3500.20. A PPN-19/SMP-2000 is recommended but not required.

AD-242

1.5 1 KC-130 A (NS)

Goal. Introduce air delivery techniques and navigation procedures to release points in connection with low-altitude static-line personnel aerial delivery.

Requirement

- (1) Perform TSO duties on a static-line personnel aerial delivery sortie.
- (2) Review route planning and chart preparation procedures. Emphasize release point computation, aerial delivery limitations, drop zone criteria, aerial delivery checklists, emergency procedures, slow-down procedures, and ingress/egress options.
- (3) Plan a route to a drop zone and compute a CARP.

(4) Conduct an objective area brief to include planned release point, drop zone hazards, IP inbound, slow-down, and egress.

(5) Navigate to a drop zone, relay all time warnings, call a static-line personnel aerial delivery, and navigate an egress route.

(6) Discuss CRM considerations during aerial delivery operations.

Performance Standard. Jumpers must land within drop zone safety criteria.

Prerequisite. AD-240.

External Syllabus Support. Aerial delivery qualified personnel, a DZ team to include a corpsman, and a drop zone survey per MCO 3500.20. A PFN-19/SMP-2000 is recommended but not required.

6. Long-range Navigation Familiarization

a. Purpose. Refine the TSO's proficiency and confidence required for safe extended ICAO/Non-RADAR flight. Specifically, at the end of this stage the TSO will be able to:

(1) Integrate all available navigation aids.

(2) Use the aircraft's RADAR for fixing and/or weather avoidance as necessary.

(3) Correctly determine the required planned ramp, ensuring fuel consumption and corresponding progress toward destination are within safe limits.

b. General. This flight shall be accomplished in an ICAO environment on a multi-national itinerary with a minimum of one 5-hour route.

c. Ground Training. The TSO will review procedures for ICAO flight to include the FLIP and FCG.

d. Flight Training (1 Flight, 5.0 Hours)

LRNAV-250 5.0 R 1 KC-130 A (N)

Goal. Integrate all available navigation aids emphasizing INS and GPS operations in a global environment.

Requirement. The TSO will demonstrate the ability to perform mission planning in an ICAO environment and to determine the aircraft's position within FLIP tolerances.

Performance Standard. Per NATOPS, FLIP, ICAO, and FCG procedures.

Prerequisite. FAM-201.

7. IR Threat Reaction

a. Purpose. To train the TSO in the skills required to operate the KC-130 Aircraft Survivability Equipment (ASE) suite in a tactical scenario in an IR MANPAD/small arms surface to air threat environment.

b. General

- (1) Aircraft should have a fully operational ASE suite.
- (2) Appropriate decoy flares shall be loaded prior to each flight.
- (3) Initial events shall be flown in the day.

c. Ground Training. The TSO shall receive instruction on the IR/MANPAD threat, IR counter-tactics, decoy flare characteristics and effectiveness, capabilities and limitations of the AAR-47, ALE-39/47, and ALQ-157.

d. Flight and Simulator Training (1 Flight, 2.0 Hours/1 Sim, 2.0 Hours)

THR-260

2.0

WST S

Goal. Introduce the planning considerations and in-flight operation of the ASE systems with emphasis on setup of the system for automatic and continuous defense against an IR/MANPAD, SPEERS, and small arms surface to air threat.

Requirement

- (1) Perform TSO duties associated with the operation of the ASE suite in order to counter an IR/MANPAD and small arms surface to air threat.
- (2) Plan and configure the ASE suite to counter an IR/MANPAD and small arms surface to air threat.
- (3) Introduce the basic concepts of various flare load-out configurations and decoy flare capabilities and limitations. Introduce programming and operation of the ALE-39/47 CMDS.
- (4) Discuss the ALQ-157 IR jammer codes and power up/power down procedures.
- (5) Discuss the AAR-47s capabilities and limitations.
- (6) Discuss IR/MANPAD and small arms counter-tactics to include appropriate expendables and maneuvers for a specific threat.
- (7) Discuss CRM considerations for operations in a threat environment.
- (8) Deploy expendables using both the remote dispensing switches and master switch.
- (9) Eight (8) passes shall be made against a simulated IR/MANPAD threat system and appropriate maneuvers and countermeasures initiated.

Performance Standard. Must correctly configure and operate the ASE suite, use appropriate terminology, and initiate appropriate defensive responses to threat indications.

Prerequisite. FAM-201 and TACNAV-220.

THR-261

2.0 R 1 KC-130 A (N)

Goal. Refine the planning considerations and in-flight operation of the ASE systems with emphasis on setup of the system for automatic and continuous defense against an IR/MANPAD and small arms surface to air threat.

Requirement

- (1) Perform TSO duties associated with the operation of the ASE suite in order to counter an IR/MANPAD and small arms surface to air threat.
- (2) Plan and configure the ASE suite to counter an IR/MANPAD and small arms surface to air threat.
- (3) Demonstrate a basic understanding of various flare load-out configurations and decoy flare capabilities and limitations. Demonstrate the ability to program and operate the ALE-39/47 CMDS.
- (4) Demonstrate an understanding of the ALQ-157 IR jammer codes and power up/power down procedures.
- (5) Demonstrate an understanding of the AAR-47 capabilities and limitations.
- (6) Discuss IR/MANPAD and small arms counter-tactics to include appropriate expendables and maneuvers for a specific threat.
- (7) Discuss CRM considerations for operations in a threat environment.
- (8) Deploy expendables using both the remote dispensing switches and master switch.
- (9) Four (4) engagements shall be made against a simulated IR/MANPAD threat system and appropriate maneuvers and countermeasures initiated.

Performance Standard. Must correctly configure and operate the ASE suite, use appropriate terminology and initiate appropriate defensive responses to threat indications.

Prerequisite. FAM-201 and TACNAV-221.

Ordnance. 300 decoy flares.

External Syllabus Support. SUAS permitting deployment of decoy flares. An EW range with Smokey SAM teams, AAR-47 stimulators and debrief capabilities greatly enhance aircrew training and should be used to the maximum extent possible.

8. Expeditionary Airfield (EAF)/Assault Landing Zone Operations (ALZ)

- a. Purpose. To develop skills to plan and navigate to VFR airfields (including unimproved ALZs) and conduct a self-contained approach.
- b. General. Flights shall be accomplished in day or night VMC.
- c. Ground Training. The TSO shall review the TACMAN chapter regarding ALZ operations, and receive instruction on self-contained approach construction.
- d. Flight and Simulator Training (1 Flight, 1.5 Hours/1 Sim, 1.5 Hours)

ALZ-270

1.5

WST S

Goal. Introduce the planning considerations and the construction of a self-contained approach plate.

Requirement

(1) Introduce SCA planning criteria, emphasizing ALZ requirements, terrain avoidance considerations, construction of the SCA plate, obstacle clearance criteria, slow down calculation, missed approach planning, the threat, and day/night/NS considerations.

(2) Construct a SCA approach plate.

(3) Conduct a SCA to an ALZ integrating all available navigation aids. The TSO will provide advisories to the pilots throughout the approach phase from initial descent to touchdown.

(4) The TSO will not have access to visual navigation aids during training.

Prerequisite. FAM-201 and TACNAV-220.

Performance Standard. Successfully execute at least four (4) self-contained approaches to two (2) different runways, using two (2) different ingress altitudes, with at least 1 missed approach.

ALZ-271

1.5

R 1 KC-130 A (N)

Goal. Refine the planning considerations and execution of a self-contained approach.

Requirement

(1) Demonstrate an understanding of SCA planning criteria, emphasizing ALZ requirements, terrain avoidance considerations, construction of the SCA plate, obstacle clearance criteria, slow down calculation, missed approach planning, the threat, and day/night/NS considerations.

(2) Construct a SCA approach plate.

(3) Conduct a SCA to an ALZ integrating all available navigation aids. The TSO will provide advisories to the

pilots throughout the approach phase from initial descent to touchdown.

(4) The TSO will not have access to visual navigation aids during training.

Prerequisite. FAM-201 and TACNAV-221.

Performance Standard. For initial training, successfully execute at least four (4) self-contained approaches to two (2) different runways, using two (2) different ingress altitudes, with at least 1 missed approach.

External Syllabus Support. MMT, STS, EAF and/or CFR as required.

333. CORE SKILL ADVANCED TRAINING

1. General

a. This phase of instruction trains the TSO in advanced core skills to include: TACNAV, AD, THRX(R), and ALZ.

b. The TSO under instruction shall receive the appropriate MAWTS-1 ASP lectures prior to the appropriate stage of training.

c. A TSO NSI is required to instruct initial AD-341.

d. All instructors must be proficient in the events they instruct.

e. To fly an event aided without an instructor, the TSO must be NSQ and proficient in the given event.

2. Tactical Navigation

a. Purpose. Refine TSO's knowledge and proficiency in advanced tactical navigation, introduce LAT, and familiarize the TSO with the phenomena peculiar to flight at or near the comfort level.

b. General. Emphasize: computer-based mission planning systems, RADAR terrain mapping, terrain masking, threat assessment and avoidance, time, and course control.

c. Ground Training. The TSO will review the KC-130 TACMAN for low-level and LAT operations.

d. Flight and Simulator Training (3 Flights, 4.0 Hours)

TACNAV-321 1.0 1 KC-130 A

Goal. Introduce skills required to plan, brief, and execute a tactical, low-level sortie in a LAT environment.

Requirement

(1) Perform TSO duties on a tactical, low-level sortie in the LAT environment.