

T&R MANUAL, KC-130FRT

CHAPTER 2

KC-130FRT FLIGHT ENGINEER
(INTERIM APPROVED 23 SEP 04)

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

UNIT TEMPLATE

NOTE

The capabilities defined and described in the core capability and unit template sections are provided to ensure each like squadron maintains a common base of training and depth of capabilities. When resources permit, and when in the judgment of the commander additional training would significantly increase the unit's war fighting capability, training to a level above these base capabilities is permitted. It is incumbent upon, and expected of, the commander to balance any increase in the depth of core capabilities against the overall health and readiness of his unit while staying within his resource constraints.

1. 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.

2. 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

3. 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-130F/R/T 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 Navigators
25 Flight Engineers
24 Loadmasters
24 Flight Mechanics

Detachment

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

4. 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.

5. METL/Core Skill Matrix. KC-130F/R/T core skills directly support the METL as follows:

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KC-130FRT CORE SKILL										CORE PLUS	
METL	A R	DEFTAC (G)	LLNAV	L A T	FORM	R G R	LRNAV	T L Z	NS	AD	DEFTAC (A)
a. Conduct Air Refueling	X	X			X		X		X		X
b. Distribute Supplies and Provide Transport Services		X				X	X	X	X	X	X
c. Conduct Tactical Airlift		X	X	X			X	X	X	X	X
d. Conduct Sea and Air Deployment Operations		X				X	X	X	X	X	X
e. Conduct Airborne Operations		X	X	X			X		X	X	X
g. Exercise Command and Control		X					X		X		X
h. Conduct Joint Personnel Recovery	X	X	X	X		X	X	X	X		X
i. Conduct Noncombatant Evacuation	X	x	X	X	X	X	X	X	X		X

6. 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 is a core plus skill. Proficiency in XXX 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 XXX.

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KC-130 Unit CSP Requirements							
CORE SKILL *CORE PLUS	Pilot	Co-pilot	TSO	Flight Engineer	Loadmaster	Flight Mechanic	Crews
AR	14	14	14	14	14	14	14
TACNAV	9	9	9	9	9	9	9
FORM	8	8		8			8
LRNAV	12	12	12	12	12	12	12
THRX(I)	6	6	6	6	6	6	6
THRX(R)	4	4	4	4			4
ALZ	9	9	9	9	9	9	9
RGR	6	6		6	6	6	6
NSQ	9	9	9	9	9	9	9
AD	4	4	4	4	8	4	4
CORE SKILL *CORE PLUS							
DEFTAC	2/2		2	2	2	2	2

KC-130 Unit CSP Requirements Detachment							
CORE SKILL *CORE PLUS	Pilot	Co-Pilot	TSO	Flight Engineer	Loadmaster	Flight Mechanic	Crews
AR	7	7	7	7	7	7	7
TACNAV	5	5	5	5	5	5	5
FORM	4	4	4	4	4	4	4
LRNAV	6	6	6	6	6	6	6
THRX(I)	5	5	5	5	5	5	5
THRX(R)							
ALZ	5	5	5	5	5	5	5
RGR	3	3	3	3	3	3	3
NSQ	5	5	5	5	5	5	5
AD	2	2	2	2	4	2	2
CORE SKILL *CORE PLUS							
DEFTAC (A)	4		2	2	2	2	2

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(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-130 Flight Engineer	RW/FW AR	RGR	ALZ EAF	AD	FORM	LONG RANGE NAV	TACNAV	THRX(I)	THRX(R)	NS	DEFTAC
T&R event requirements to attain competency	210 211* 212 213* 313	274*	271* 272 273	241*	231*	250*	220* 223 224 321	260*	360	204* 205*	461 462

Notes:

1. Some events are duplicated in more than one category but not in the overall total.
2. "*" Denotes a Refresher Flight Engineer or an individual who needs to regain qualification(s).

(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-130 Flight Engineer	RW/FW AR	RGR	ALZ EAF	AD	FORM	LONG RANGE NAV	TACNAV	THRX(I)	THRX(R)	NS	DEFTAC
T&R event requirements to maintain competency	211 212	274	271	241	231	250	224 321	261	360	204 205	462

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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	Pilots	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	Crews
TPC	9					
SEC LDR	4					
DIV LDR	2					
TAC RAC	4					
RC		1				
STRAT RAC	1					

7. 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.

Qualification (TRACKING CODE)	Initial Event Qualification Requirements.
NSQ(611)	NS-204, NS-205, TACNAV-223, TACNAV-224, RQD-612, RQD-681 and a designation letter signed by the Commanding Officer.
FE-2 NATOPS Evaluation (680)	Core Introduction Phase complete and a designation letter signed by Commanding Officer.
FE-1 NATOPS Evaluation (681)	Core Basic Phase Complete. Plane Captain Syllabi Complete IAW OPNAV 3710.7 and a designation letter signed by Commanding Officer.

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Designation (TRACKING CODE)	Initial Event Designation Requirements.
Engine Run (600)	Upon completion of RQD-600, Commanding Officer shall designate FE engine run certified.
Taxi (601)	Upon completion of RQD-612, Commanding Officer shall designate FE engine run certified.
Assistant NATOPS Instructor (683)	RQD-681, RQD-682, 1500 Flight Hours as qualified Flight Engineer and a designation letter signed by the Commanding Officer.
NATOPS Instructor (684)	RQD-681, RQD-682, RQD-683, 1500 Flight Hours as qualified Flight Engineer, certification of the Model Manager and a designation letter signed by the Commanding Officer.
FEI (690)	Completion of SFAM-500 through SFAM-504 and 1000 flight hours as a qualified Flight Engineer and a designation letter signed by the Commanding Officer.
NSI (691)	Upon certification by MAWTS-1 FE will be designated a NSI by the Commanding Officer.
WTI (692)	Upon certification by MAWTS-1 FE will be designated a WTI by the Commanding Officer.

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

	KC-130 Squadron
INSTRUCTOR DESIGNATION	Flight Engineers
LATI	
ANI	6
WTI	2
DEFTACI	
NSI	3
FEI	10

	KC-130 Detachment
INSTRUCTOR DESIGNATION	Flight Engineers
LATI	
ANI	3
WTI	1
DEFTACI	
NSI	1
FEI	5

8. 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.

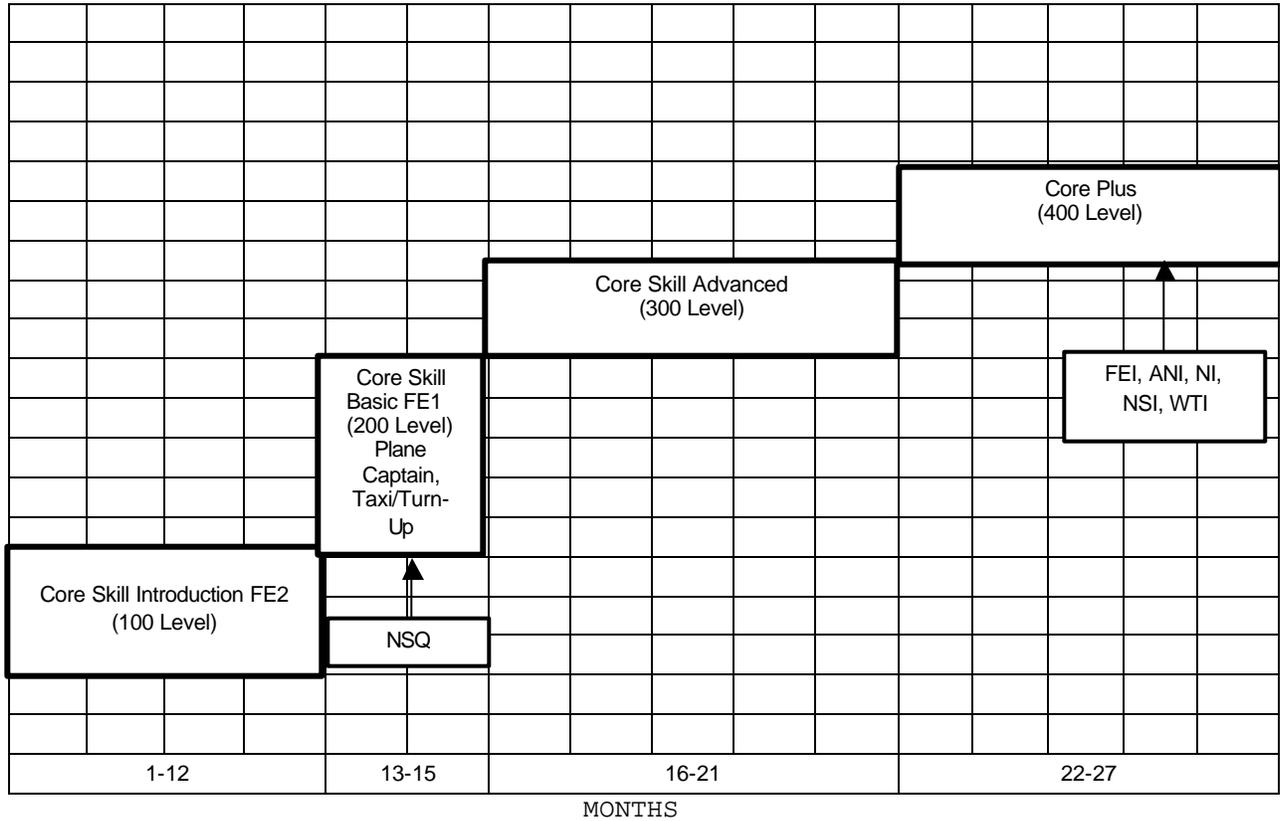
b. Proficiency. Proficiency is a measure of achievement of a specific skill. Re-fly factors establish the maximum time between demonstration of those particular skills. CRP is a measurement of "demonstrated proficiency." If an aircrew exceeds the re-fly factor for a particular event, the individual loses 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 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.

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9. KC-130F/R/T Flight Engineer Progression Model. The training progression model below provides recommended core skill, qualification, and designation attainment timelines for the average Flight Engineer.



201. PROGRAM OF INSTRUCTION (POI) FOR BASIC, TRANSITION, CONVERSION, AND KC-130J SERIES CONVERSION FLIGHT ENGINEER

WEEKS	COURSE	PERFORMING ACTIVITY
Training Track 1		
1-12	KC-130 Flight Engineer Ground Course	CNATT-MARU
13-15	KC-130 Flight Simulator	Training Squadron
16-35	Core Introduction Training	Training Squadron
36-40	Core Basic Training	Tactical Squadron
41-46	Core Advanced Training	Tactical Squadron
47-53	Core Plus Training	Tactical Squadron
Training Track 2		
1-13	C-130E/H Aircraft Systems/BFE	Little Rock AFB
13-35	C-130E/H FIQ/FMQ	Little Rock AFB
36-42	REV-130 through RQD-680	Tactical Squadron
43-48	Core Basic Training	Tactical Squadron
49-54	Core Advanced Training	Tactical Squadron
55-60	Core Plus Training	Tactical Squadron

WEEKS	COURSE	PERFORMING ACTIVITY
	Training Track 1	
1-12	KC-130 Flight Engineer Ground Course	CNATT-MARU
13-15	KC-130 Flight Simulator	Training Squadron
16-52	Core Introduction Training	Training Squadron
	Training Track 2	
1-13	C-130E/H Aircraft Systems/BFE	Little Rock AFB
13-35	C-130E/H FIQ/FMQ	Little Rock AFB
36-44	Core Basic Training	Tactical Squadron
45-64	Core Advanced Training	Tactical Squadron
65-80	Core Plus Training	Tactical Squadron

201.1 Training Track 2 Student Flight Engineer shall complete the following codes at the Tactical Squadron prior to beginning Core Basic Skills Training:

1. REV-130 Engines Systems
2. REV-137 Fuel Systems
3. REV-138 Utility Hydraulics
4. REV-142 Aerial Refueling Systems
5. SMGR-160 Engine Run-Up
6. SMGR-161 Engine Run-Up and Taxi
7. MGR-164 Engine Run-Up and Taxi
8. MGR-165 Engine Run-Up and Taxi
9. MGRCK-166 Taxi Pilot Check
10. MFAM-170 Intro Fixed Wing Aerial Refueling
11. MFAM-171 Refine Fixed Wing Aerial Refueling
12. MFAM-172 Intro Helicopter Aerial Refueling
13. MFAM-173 Refine Helicopter Aerial Refueling
14. RQD-680 FE-2 NATOPS Check

210. GROUND TRAINING COURSES OF INSTRUCTION

1. Ground training shall be conducted for each syllabus level.
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
Flight Engineer Initial Qualification	314 th Airlift Sqdn
Flight Engineer Mission Qualification	314 th Airlift Sqdn
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 courses are 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

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211. 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

220. BASIC, TRANSITION, CONVERSION, AND J MODEL SERIES CONVERSION FLIGHT ENGINEER TRAINING SUMMARY:

220.1. Core Skill Introduction Training

CORE SKILL INTRODUCTION TRAINING By Stage	Events	Hours	CRP
Simulator Familiarization	15	32.0	17.0
Flight Familiarization	8	28.0	7.0
Review Phase	14	56.0	15.0
Ground/Flight Maintenance Phase	8	25.0	16.0
Mission Familiarization	5	20.0	5.0
FE-2 NATOPS Evaluation	1	8.0	0.0
TOTALS (Less Flight School)	50	169.0	60.0

220.2. Core Skill Basic Training

CORE SKILL BASIC TRAINING By Stage	Events	Hours	CRP
FE Proficiency/Procedure	1	2.0	1.0
Night Systems (NS)	2	4.0	2.0
Aerial Refueling (AR)	4	16.0	2.0
Tactical Navigation (TACNAV)	3	6.0	2.0
Formation (FORM)	1	2.0	1.0
Air Delivery (AD)	2	4.0	2.0
Long Range Navigation (LRNAV)	1	8.0	1.0
Assault Landing Zone (ALZ)	3	6.0	2.0
Rapid Ground Refueling (RGR)	1	0.0	1.0
IR Threat Reaction (THRX(I))	1	2.0	1.0
TOTALS	19	50.0	15.0

220.3. Core Skill Advanced Training

CORE SKILL ADVANCED TRAINING By Stage	Events	Hours	CRP
Tactical Navigation (TACNAV)(LATT)	1	3.0	10.0
Radar Threat Reaction (THRX(R))	1	3.0	10.0
TOTALS	2	6.0	20.0

220.4. Core Plus Training

CORE PLUS TRAINING By Stage	Events	Hours	CRP
Defensive Tactics (DEFTAC)	2	4.0	1.0
Tactical Navigation (TACNAV)	1	2.0	1.0
Assault Landing Zone (ALZ)	1	2.0	1.0
Aerial Delivery (AD)	2	4.0	2.0
TOTALS	6	12.0	5.0

TOTALS	77	241.0	100.00
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221. REFRESHER FLIGHT ENGINEER

221.1. Core Skill Introduction Training

CORE SKILL INTRODUCTION TRAINING By Stage	Events	Hours	CRP
Simulator Familiarization	13	26.0	13.0
Flight Familiarization	5	24.0	6.0
Review Phase	0	0.0	0.0
Ground/Flight Maintenance Phase	0	0.0	0.0
Mission Familiarization	4	16.0	4.0
FE-2 NATOPS Evaluation	0	0.0	0.0
TOTALS (Less Flight School)	22	66.0	23.0

221.2. Core Skill Basic Training

CORE SKILL BASIC TRAINING By Stage	Events	Hours	CRP
FE Proficiency/Procedure	1	2.0	1.0
Night Systems (NS)	2	4.0	2.0
Aerial Refueling (AR)	4	16.0	2.0
Tactical Navigation (TACNAV)	3	6.0	2.0
Formation (FORM)	1	2.0	1.0
Air Delivery (AD)	2	4.0	2.0
Long Range Navigation (LRNAV)	1	8.0	1.0
Assault Landing Zone (ALZ)	3	6.0	2.0
Rapid Ground Refueling (RGR)	1	0.0	1.0
IR Threat Reaction (THRX(I))	1	2.0	1.0
TOTALS	19	50.0	15.0

221.3. Core Skill Advanced Training

CORE SKILL ADVANCED TRAINING By Stage	Events	Hours	CRP
Tactical Navigation (TACNAV)(LATT)	1	3.0	10.0
Radar Threat Reaction (THRX(R))	1	3.0	10.0
TOTALS	2	6.0	20.0

221.4 Core Plus Training

CORE PLUS TRAINING By Stage	Events	Hours	CRP
Defensive Tactics (DEFTAC)	2	4.0	1.0
Tactical Navigation (TACNAV)	1	2.0	1.0
Assault Landing Zone (ALZ)	1	2.0	1.0
Aerial Delivery (AD)	2	4.0	2.0
TOTALS	6	12.0	5.0

TOTALS	49	138.0	63.0
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222. 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.

230. 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, and model conversion Flight Engineer's should 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. Flights annotated with an N shall be flown at night, with or without NVDs (depending on qualification). Flights annotated with an (N) may be flown at night, with or without NVD's (depending on qualification). Flights annotated with an NS shall be flown at night utilizing NVDs. Flights annotated with an (NS) may be flown at night and if so shall utilize NVDs.

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

e. Minimum required refresher flights are indicated with an R. Additional guidance concerning refresher Flight Engineers is contained in the Aviation T&R Program Manual.

f. Flight Engineers not NSQ and conducting NS training as a crewmember shall be instructed by an NSI for all Core Basic NSQ syllabus initial codes. Subsequent events may be flown with a proficient NSQ crewmember provided the crewmember meets the requirements for the associated code.

g. 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 (CRM). CRM shall be briefed for all flights and events.

231. CORE SKILL INTRODUCTION TRAINING

1. General. Upon completion of this phase of training, the Crew Chief will be NATOPS qualified as a Flight Engineer 2. The Flight Engineer will be capable basic aircraft operation to include emergency procedures, CRM. 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-2 until satisfactory completion of the entire core skills introduction phase. Upon NATOPS check completion, Flight Engineers shall log the RQD-680 tracking code.

2. Simulator Familiarization

a. Purpose. Familiarize the student Flight Engineer with his responsibilities and duties in the correct use of aircraft checklists, CRM, normal and 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, CRM, 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 Periods, 30.0 Hours)

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

Goal. Introduce the Flight Engineers responsibilities/duties, CRM, 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 NAVAIR 01-75GAA-1.

Prerequisite. Ground academic training.

Ordinance. N/A

External syllabus support. IPT/CPT/OFT/WST.

SFAM-101 2.0 IPT/CPT/OFT/WST S

Goal. Introduce the Flight Engineer's responsibilities/duties, CRM, 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 NAVAIR 01-75GAA-1.

Prerequisite. SFAM 100.

Ordinance. N/A

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 NAVAIR 01-75GAA-1.

Prerequisite. SFAM 101

Ordinance. N/A

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 NAVAIR 01-75GAA-1.

Prerequisite. SFAM 102

Ordinance. N/A

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.

T&R MANUAL, KC-130F/R/T

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 NAVAIR 01-75GAA-1.

Prerequisite. SFAM 103

Ordinance. N/A

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 NAVAIR 01-75GAA-1.

Prerequisite. SFAM 104

Ordinance. N/A

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 NAVAIR 01-75GAA-1.

Prerequisite. SFAM 105

Ordinance. N/A

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 NAVAIR 01-75GAA-1.

Prerequisite. SFAM 106

Ordinance. N/A

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 NAVAIR 01-75GAA-1.

Prerequisite. SFAM 107

Ordinance. N/A

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 NAVAIR 01-75GAA-1.

Prerequisite. SFAM 108

Ordinance. N/A

T&R MANUAL, KC-130F/R/T

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 NAVAIR 01-75GAA-1.

Prerequisite. SFAM 109

Ordnance. N/A

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 NAVAIR 01-75GAA-1.

Prerequisite. SFAM 110

Ordnance. N/A

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 NAVAIR 01-75GAA-1.

Prerequisite. SFAM 111

Ordnance. N/A

External syllabus support. IPT/CPT/OFT/WST

SFAM-113 4.0 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 NAVAIR 01-75GAA-1.

Prerequisite. SFAM 112

Ordnance. N/A

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, CRM, normal & emergency procedures, remedial actions for system malfunctions, and aircraft performance data.

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW NAVAIR 01-75GAA-1.

Prerequisite. SFAM 113

Ordnance. N/A

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 (8 Flights, 40.0 Hours)

<u>FAM-115</u>	<u>4.0</u>	<u>R 1 KC-130 A</u>
<p><u>Goal.</u> Familiarize the student Flight Engineer with correct turnaround inspection and normal flight operations.</p>		
<p><u>Requirement.</u> The student Flight Engineer shall be familiar with correct turnaround inspection, and normal flight operations IAW NA01-75GAA-6-1 and NFM.</p>		
<p><u>Performance Standard.</u> Student Flight Engineer shall perform responsibilities/duties IAW NA01-75GAA-6-1 and NFM.</p>		
<p><u>Prerequisite.</u> SFAM 114</p>		
<p><u>Ordnance.</u> N/A</p>		
<p><u>External syllabus support.</u> N/A</p>		
<u>FAM-116</u>	<u>4.0</u>	<u>R 1 KC-130 A</u>
<p><u>Goal.</u> Familiarize the student Flight Engineer with time management of turnaround inspection, computation of performance data, and normal flight operations.</p>		
<p><u>Requirement.</u> 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.</p>		
<p><u>Performance Standard.</u> <u>Performance Standard.</u> Student Flight Engineer shall perform responsibilities/duties IAW NA01-75GAA-6-1 and NFM.</p>		
<p><u>Prerequisite.</u> FAM 115</p>		
<p><u>Ordnance.</u> N/A</p>		
<p><u>External syllabus support.</u> N/A</p>		
<u>FAM-117</u>	<u>4.0</u>	<u>R 1 KC-130 A N</u>
<p><u>Goal.</u> 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.</p>		
<p><u>Requirement.</u> 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.</p>		
<p><u>Performance Standard.</u> Student Flight Engineer shall perform responsibilities/duties IAW NA01-75GAA-6-1 and NFM.</p>		

Prerequisite. FAM 116

Ordnance. N/A

External syllabus support. N/A

FAM-118

8.0 R 1 KC-130 A

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 NA01-75GAA-6-1 and NFM.

Prerequisite. FAM 117

Ordnance. N/A

External syllabus support. N/A

FAM-119

4.0 R 1 KC-130 A

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 NFM.

Prerequisite. FAM 118

Ordnance. N/A

External syllabus support. N/A

FAM-120

4.0 R 1 KC-130 A

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 NFM.

T&R MANUAL, KC-130F/R/T

Prerequisite. FAM 120

Ordinance. N/A

External syllabus support. N/A

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.

e. Flight Training (13 flights, 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 NFM.

Prerequisite. FAM 117

Ordinance. N/A

External syllabus support. N/A

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 NFM.

Prerequisite. REV 130

Ordinance. N/A

External syllabus support. N/A

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, syncrophasing system, and propeller controls IAW FRS student guide.

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW NFM.

Prerequisite. REV 131

Ordinance. N/A

External syllabus support. N/A

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 NFM.

Prerequisite. REV 132

Ordinance. N/A

External syllabus support. N/A

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 NFM.

T&R MANUAL, KC-130F/R/T

Prerequisite. REV 133

Ordinance. N/A

External syllabus support. N/A

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 NESAs system, possible malfunctions, troubleshooting, and corrective actions IAW FRS student guide.

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW NFM.

Prerequisite. REV 134

Ordinance. N/A

External syllabus support. N/A

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 NFM.

Prerequisite. REV 135

Ordinance. N/A

External syllabus support. N/A

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/defueling 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 NFM.

Prerequisite. REV 136

Ordinance. N/A

External syllabus support. N/A

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 NFM.

Prerequisite. REV 137

Ordinance. N/A

External syllabus support. N/A

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 NFM.

Prerequisite. REV 138

Ordinance. N/A

External syllabus support. N/A

T&R MANUAL, KC-130F/R/T

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 NFM.

Prerequisite. REV 139

Ordinance. N/A

External syllabus support. N/A

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 NFM.

Prerequisite. REV 140

Ordinance. N/A

External syllabus support. N/A

REV-142

4.0 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 NFM.

Prerequisite. REV 141

Ordinance. N/A

External syllabus support. N/A

4. Intermediate Progress Evaluation

- a. Purpose. Evaluate the student Flight Engineer's overall progress.

b. General. Flight portion of the progress evaluation will 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. Academic/Ground Training. N/A

e. Flight Training (1 Flight, 4.0 Hours)

CK-150 4.0 R E OFT/WST/1KC-130 S/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 NFM.

Prerequisite. Completion of all familiarization and review codes.

Ordinance. N/A

External syllabus support. N/A

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 Periods, 14.0 Hours)

SMGR-160 3.0 IPT/CPT/OOFT/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 NFM.

T&R MANUAL, KC-130F/R/T

Prerequisite. Completion of all familiarization and review codes.

Ordinance. N/A

External syllabus support IPT/CPT/OFT/WST

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 NFM.

Prerequisite. SMGR-160

Ordinance. N/A

External syllabus support. IPT/CPT/OOFT/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 NFM.

Prerequisite. SMGR-161

Ordinance. N/A

External syllabus support. IPT/CPT/OOFT/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 NFM.

Prerequisite. SMGR-162

Ordinance. N/A

External syllabus support. IPT/CPT/OOFT/WST

Ground Training (3 Periods, 9.0 Hours)

MGR-164

3.0 1 KC-130 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 NFM.

Prerequisite. SMGR-163

Ordinance. N/A

External syllabus support. N/A

MGR-165

3.0 1 KC-130 S

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 NFM.

Prerequisite. MGR-164

Ordinance. N/A

External syllabus support. N/A

MGRCK-166

3.0 R 1 KC-130 S

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 NFM.

Prerequisite. MGR-165

Ordinance. N/A

External syllabus support. N/A

Flight Training (1 Period, 2.0 Hours)

T&R MANUAL, KC-130F/R/T

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 NFM.

Prerequisite. MGR-166

Ordnance. N/A

External syllabus support. N/A

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 (7 Flights, 28.0 Hours)

MFAM-170 4.0 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 NFM.

Prerequisite. CK-150

Ordnance. N/A

External syllabus support. Fixed-wing receiver, special use airspace

MFAM-171 4.0 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 NFM.

Prerequisite. SFAM-113, MFAM-170

Ordnance. N/A

External syllabus support. Fixed-wing receiver, special use airspace

MFAM-172

4.0 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 NFM.

Prerequisite. SFAM-113, MFAM-170

Ordnance. N/A

External syllabus support. Rotary-wing receiver, special use airspace

MFAM-173

4.0 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 NFM.

Prerequisite. CK-150

Ordnance. N/A

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 NFM.

Prerequisite. CK-150

Ordnance. N/A

External syllabus support. Special Use Airspace.

232. CORE BASIC TRAINING

1. General. Upon completion of this phase of training, the Flight Engineer will be day 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. The focus will be 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 (FE_2) 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, WTIs or NSIs (as required). Once they have completed the initial event, subsequent events shall be flown with like qualified aircrew.

b. Within this phase 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. Ensuring proficiency in functional check flight procedures. Upon completion the Flight engineer shall log RQD-602.

c. 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. 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.

d. Conduct Flight Engineers (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 instructor, subsequent events may be flown with a qualified crew provided the Flight Engineer meets

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 flight, 2 Hours)

FE-200 2.0 1 KC-130/OFT/WST 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 NFM.

Prerequisite. FE-2 (RQD-680) Qualification

Ordinance. N/A

External syllabus support. N/A

2. 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) Flight Engineer conducting NS training shall be instructed by an NSI for all initial codes. Subsequent events and non-syllabus NS codes or NS optional codes maybe initially flown with a proficient NSQ crewmember as long as the Flight Engineer has the prerequisites for the event.

(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. MAWTS-1 NVD ASP courses and NITE lab (includes Night Vision Systems, N.S. Human Factors and Night Environment ASPs).

e. Flight Training (2 flights, 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 T&R Program Manual HLL standards.

Performance Standard. Satisfactory completion per NFM, KC-130 TACMAN (AS REQUIRED), and OPNAVINST 3710.7_.

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

T&R MANUAL, KC-130F/R/T

Ordnance. N/A

External syllabus support. N/A

NS-205 2.0 1 KC-130 A NS

Goal. LLL NVD Operations

Requirement. Conduct all operations included in NS-203 under LLL conditions.

Performance Standard. Satisfactory completion per NFM, KC-130 TACMAN (AS REQUIRED), and OPNAVINST 3710.7_.

Prerequisite. NS-204.

Ordnance. N/A

External syllabus support. N/A

3. Aerial Refueling Familiarization

a. Purpose. Refine FE skills 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 both 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 Flights, 16.0 Hours)

AR-210 4.0 1 KC-130/OFT/WST 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 NFM.

Prerequisite. FE-200

Ordnance. N/A

External syllabus support. Fixed Wing Receiver Aircraft and special use airspace.

AR-211 4.0 1 KC-130/OFT/WST A/S N

Goal. Introduce and refine night fixed wing aerial refueling procedures.

Requirement. Review normal and emergency aerial refueling

procedures at night PER KC-130 TACMAN and AR Manual. Use of EMCON procedures is optional.

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW NFM.

Prerequisite. AR-210.

Ordinance. N/A

External syllabus support Fixed Wing Receiver Aircraft and special use airspace.

AR-212

4.0 1 KC-130/OFT/WST 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 NFM.

Prerequisite. AR-210.

Ordinance. N/A

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

AR-213

4.0 1 KC-130/OFT/WST A/S N

Goal. Introduce night helicopter aerial refueling procedures.

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

Performance Standard. Student Flight Engineer shall perform responsibilities/duties IAW NFM.

Prerequisite. AR-212.

Ordinance. N/A

External syllabus support. Rotary Wing Receiver Aircraft and special use airspace.

4. Tactical Navigation

a. Purpose. Train the Flight Engineer in low level procedures.

b. General

(1) Flight Engineer conducting NS training shall be instructed by an NSI for all NSQ syllabus initial codes. Subsequent events and non-syllabus NS or NS optional codes may be initially flown with a proficient NSQ Flight Engineer as long as the Flight Engineer has met the prerequisites for the

event.

(2) A qualified instructor (FE) shall accompany all initial qualified 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 (3 Flights, 6.0 Hours)

TACNAV-220 2.0 1 KC-130/OFT/WST 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 NFM.

Prerequisite. FE-200.

Ordinance. N/A

External syllabus support. N/A

TACNAV-223 2.0 1 KC-130/OFT/WST 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 NFM.

Prerequisite. TACNAV-220, NS-204, NS-205.

Ordinance. N/A

External syllabus support. N/A

TACNAV-224 2.0 1 KC-130/OFT/WST 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 NFM.

Prerequisite. TACNAV-220, NS-204, NS-205.

Ordinance. N/A

External syllabus support. N/A

5. Formation

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

b. General

(1) Flight Engineer conducting NS training shall be instructed by an NSI for all NSQ syllabus initial codes. Subsequent events and non-syllabus NS or NS optional codes may be initially flown with a proficient NSQ Flight Engineer as long as the Flight Engineer has met the prerequisites for the event.

(2) A qualified instructor (FE) shall accompany all initial qualified 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 Flight, 2.0 Hours)

FORM-231 2.0 2 KC-130/OFT/WST 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 NFM.

Prerequisite. TACNAV-220.

Ordnance. N/A

External syllabus support. N/A

6. Aerial Delivery

a. Purpose. Introduce the Flight Engineer in aerial delivery procedures per current instructions.

b. General

(1) Flight Engineer conducting NS training shall be instructed by an NSI for all NSQ syllabus initial codes. Subsequent events and non-syllabus NS or NS optional codes may be initially flown with a proficient NSQ Flight Engineer as long as the Flight Engineer has met the prerequisites for the event.

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

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/OFT/WST 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 NFM.

Prerequisite. FE-200.

Ordnance. N/A

External syllabus support. AD Platoon, USAF CCT, USMC MMT

AD-242 2.0 1 KC-130/OFT/WST A/S NS

Goal. Introduce NVG aerial delivery procedures.

Requirement. Fly and review aerial delivery mission of cargo or troops and NVG considerations perr TACMAN.

Performance Standard. Flight Engineer shall perform responsibilities/duties IAW NFM.

Prerequisite. AD-241

Ordnance. N/A

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 Flight, 8.0 Hours)

LRNAV-250 8.0 1 KC-130 A (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 NFM.

Prerequisite. FE-200.

Ordinance. N/A

External syllabus support. N/A

8. Threat Reaction IR Counter tactics / ASE Intro

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

b. General

(1) Flight Engineer conducting NS training shall be instructed by an NSI for all NSQ syllabus initial codes. Subsequent events and non-syllabus NS or NS optional codes may be initially flown with a proficient NSQ Flight Engineer as long as the Flight Engineer has met the prerequisites for the event.

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

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

d. Ground/Academic Training. Prior to THRX(I)-261, the Flight Engineer shall review pertinent chapters in the KC-130 TACMAN and receive:

(1) MAWTS-1 ASP course on tactical airCRM.

(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 Flight, 2.0 Hours)

THRX-261 2.0 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. Emphasis shall be placed on briefing, conduct of flight, and lookout doctrine.

Performance Standard. Flight Engineer shall perform responsibilities/duties IAW NFM.

Prerequisite. FE-200, TACNAV-220

Ordinance. 300 decoy flares

External syllabus support. SST Team

9. Assault Landing Zones

a. Purpose. Train the Flight Engineer on assault landing zones and Expeditionary Airfield Operations.

b. General

(1) Flight Engineer conducting NS training shall be instructed by an NSI for all NSQ syllabus initial codes. Subsequent events and non-syllabus NS or NS optional codes may be initially flown with a proficient NSQ Flight Engineer as long as the Flight Engineer has met the prerequisites for the event.

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

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 Flights, 6.0 Hours)

ALZ-271 2.0 1 KC-130/OFT/WST A/S

Goal. Introduce TLZ procedures at improved fields.

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

Performance Standard. Flight Engineer shall perform responsibilities/duties IAW NFM.

Prerequisite. FE-200

Ordinance. N/A

External syllabus support. MMT, CCT

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

Goal. Introduce NVG (HLL) TLZ 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 NFM.

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

Ordnance. N/A

External syllabus support. MMT, CCT

ALZ-273

2.0 1 KC-130/OFT/WST A/S NS

Goal. Introduce NVG (LLL) TLZ 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 NFM.

Prerequisite. FE-200, NS-204, NS-205, ALZ-271, ALZ-272

Ordnance. N/A

External syllabus support. MMT, CCT

10. Rapid Ground Refueling

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

b. General

(1) Flight Engineer conducting NS training shall be instructed by an NSI for all NSQ syllabus initial codes. Subsequent events and non-syllabus NS or NS optional codes may be initially flown with a proficient NSQ Flight Engineer as long as the Flight Engineer has met the prerequisites for the event.

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

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 Flights, 0.0 Hours)

RGR-274

0.0 1 KC-130 S (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 NFM.

Prerequisite. FE-200

Ordnance. N/A

External syllabus support. N/A

233. CORE SKILL ADVANCED TRAINING

1. 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 surface-based threats THRXI. 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.

2. Tactical Navigation

a. Purpose. Qualify the Flight Engineer, or to maintain proficiency for the LAT qualified Flight Engineer, in both day and night LAT in the unique tasks and requirements associated with low altitude tactics flights in a low to medium ground threat environment.

b. General

(1) Flight Engineer conducting NS training shall be instructed by an NSI for all NSQ syllabus initial codes. Subsequent events and non-syllabus NS or NS optional codes may be initially flown with a proficient NSQ Flight Engineer as long as the Flight Engineer has met the prerequisites for the event. LAT rules of conduct are contained in KC-130 TACMAN. All LAT sorties require all crew members to be LAT qualified and proficient.

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

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

d. Ground/Academic Training. Per the MAWTS-1 Course Catalog. Complete MAWTS-1 ASE courseware for LAT and review KC-130 TACMAN or published TTP as appropriate.

e. Flight Training (1 Flight, 3.0 Hours)

<u>TACNAV-321</u>	<u>3.0</u>	<u>1 KC-130/OFT/WST A/S</u>
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Goal. Introduce and qualify the Flight Engineer, or to maintain proficiency for the LAT qualified Flight Engineer, in the duties associated with low altitude tactics flights in a low to medium ground threat environment.

Requirement. Emphasis will be placed on cargo compartment preparation, crew briefing, lookout doctrine, scan for threats, CRM 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 NFM and KC-130 TACMAN.

Prerequisite. FE-200, TACNAV-220.

Ordinance. N/A

External Support. Approved LAT training route, Threat Emitters.

3. Threat Reaction (Radar) (THRXI)

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. Qualify the Flight Engineer, or maintain proficiency for the DEFTAC qualified Flight Engineer, in the unique tasks and requirements associated with defensive tactics flights in a low to medium air threat environment. This phase of instruction may be taught locally utilizing the MAWTS-1 ASP, or in conjunction with AATTC, by a qualified Instructor.

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

d. Ground/Academic Training. Prior to THRXI-360, the Flight Engineer shall review pertinent chapters in the KC-130 TACMAN and receive:

- (1) MAWTS-1 ASP course on Tactical AirCRM.
- (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.
- (5) Complete THRX(IR)-261.

e. Flight Training (1 Flight, 3.0 Hours)

THRX-360 4.0 1 KC-130 A (N)

Goal. Train the Flight Engineer duties in IR 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. Emphasis shall be placed on briefing, conduct of flight, and lookout doctrine.

Performance Standard. Flight Engineer shall perform responsibilities/duties IAW NFM.

Prerequisite. FE-200, TACNAV-220, THRX-261
Ordinance. 140 decoy flares, 160 chaff.

External syllabus support. Approved LAT training route, Threat Emitters, SST team.

234. CORE PLUS TRAINING

1. General. Upon completion of this level, the FE 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 unaided assault landings. FE's receiving initial training shall be instructed by either a current Squadron Stage Instructor, DEFTACI, NSI or WTI (as required). Once they have completed the initial event, subsequent events may be flown with proficient aircrew.

2. Tactical Navigation

a. Purpose. Qualify the FE, or to maintain proficiency for the LAT qualified FE, in both day and night LAT in the unique tasks and requirements associated with low altitude tactics flights in a low to medium ground threat environment.

b. General

(1) FE conducting NS training shall be instructed by an NSI for all NSQ syllabus initial codes. Subsequent events and non-syllabus NS or NS optional codes may be initially flown with a proficient NSQ FE as long as the FE has met the prerequisites for the event. LAT rules of conduct are contained in KC-130 TACMAN. All LAT sorties require all crew members to be LAT qualified and proficient.

(2) A qualified instructor (WTI/FEI) shall accompany all initial qualified crewmembers.

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

d. Ground/Academic Training. Per the MAWTS-1 Course Catalog. Complete MAWTS-1 ASE courseware for LAT and review KC-130 TACMAN or published TTP as appropriate.

e. Flight Training (1 Flights, 2.0 Hours)

TACNAV-422 2.0 1 KC-130/OFT/WST A/S N

Goal. Introduce and qualify the FE in unaided low level navigation, or to maintain proficiency for the qualified FE, in the duties associated with night low level flights in a low to medium ground threat environment.

Requirement. Emphasis will be placed on cargo compartment preparation, crew briefing, lookout doctrine, scan for threats, CRM 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 NFM and KC-130 TACMAN.

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

Ordinance. N/A

External Support. Approved training route, Threat Emitters.

3. Aerial Delivery

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

b. General

(1) FE conducting NS training shall be instructed by an NSI for all NSQ syllabus initial codes. Subsequent events and non-syllabus NS or NS optional codes may be initially flown with a proficient NSQ FE as long as the FE has met the prerequisites for the event.

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

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-442 2.0 1 KC-130/OFT/WST A/S (N)

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

Requirement. Emphasis will be placed on cargo compartment preparation, crew briefing, lookout doctrine, scan for threats, CRM 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 NFM and KC-130 TACMAN.

Prerequisite. FE-200, AD-241.

Ordnance. N/A

External Support. AD Platoon.

AD-444 2.0 1 KC-130/OFT/WST A/S N

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

Requirement. Emphasis will be placed on cargo compartment preparation, crew briefing, CRM and combat entry/exit checklists.

Performance Standard. Per the NFM and KC-130 TACMAN.

Prerequisite. FE-200, AD-241.

Ordnance. LU-2A/B

External Support. Ordnance Personnel, Approved Training Area.

4. Defensive Tactics (DEFTAC)

a. Purpose. Introduce defensive tactics utilized in air-to-air engagements by combining maneuvering and use of the ASE suite. Emphasis will be placed on 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 preferred to have fully operational ASE suite.

T&R MANUAL, KC-130F/R/T

(2) If ASE-equipped aircraft is used, appropriate chaff and decoy flares shall 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. 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. Prior to DEFTAC-461, the FE shall receive:

- (1) MAWTS-1 ASP course on Tactical CRM.
- (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.
- (5) Specific training on installed KC-130FRT ASE equipment.

e. Flight Training (2 Flights, 4.0 Hours)

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

Goal. Introduce the FE to defensive tactics mission maneuvering relative to an air threat.

Requirement. The FE will perform normal and emergency procedures during a flight involving the use of defensive tactics. Emphasis will be placed on crew briefing, lookout doctrine, scan for air threats and terrain clearance, CRM and combat entry/exit checklists. This event may include escorts.

Performance Standard. Per the NFM and KC-130 TACMAN.

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

Ordnance. Standard Chaff load (160) and Decoy Flare (140).
External Syllabus Support. Appropriate aggressor aircraft.

DEFTAC-462 2.0 1 KC-130, 2 Adversaries A

Goal. Refine and maintain proficiency for the DEFTAC qualified Flight Engineer during a defensive tactics mission maneuvering relative to an air threat.

Requirement. The Flight Engineer will perform normal and emergency procedures during a flight involving the use of defensive tactics. Emphasis will be placed on crew briefing, lookout doctrine, scan for air threats and terrain clearance, CRM and combat entry/exit checklists. This event may include escorts.

Performance Standard. Per the NFM 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.

4. Assault Landing Zones

a. Purpose. Train the FE on assault landing zones and Expeditionary Airfield Operations.

b. General

(1) FE conducting NS training shall be instructed by an NSI for all NSQ syllabus initial codes. Subsequent events and non-syllabus NS or NS optional codes may be initially flown with a proficient NSQ FE as long as the FE has met the prerequisites for the event.

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

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 FE with ground emergencies in an austere environment and performance data for specific circumstances applicable pubs for unimproved runway operation.

e. Flight Training (1 Flight, 2.0 Hours)

ALZ-471 2.0 1 KC-130/OFT/WST A/S N

Goal. Introduce unaided TLZ procedures at improved/unimproved fields.

Requirement. FE shall be exposed to unaided maximum effort takeoffs and landings at improved field IAW TACMAN. Review all appropriate performance data.

Performance Standard. FE shall perform responsibilities/duties IAW NFM.

Prerequisite. FE-200, ALZ-271.

Ordinance. N/A

External syllabus support. MMT, CCT.

240. INSTRUCTOR TRAINING

1. Flight Engineer Instructor

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

b. General

(1) Emphasis will be placed on standardization and the ability of the FE to instruct normal and emergency procedures per the NATOPS Flight Manual. Upon successful completion of SFAM-504 the FE shall be evaluated inflight for qualification, RQD-690, to receive designation as an FEI.

T&R MANUAL, KC-130F/R/T

(2) 1,000 flight hours as a qualified FE are required to begin this stage of qualification.

(3) 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 Periods, 20.0 Hours)

SFAM-500

4.0

E CPT/OFT S

Goal. Familiarize the Instructor Under Training (IUT) in the proper operation of the device trainers.

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

Performance Standard. IUT FE shall perform responsibilities/duties IAW NFM.

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

Ordnance. N/A

External syllabus support. N/A

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 FE shall perform responsibilities/duties IAW NFM.

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

Ordnance. N/A

External syllabus support. N/A

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 FE shall perform responsibilities/duties IAW NFM.

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

Ordnance. N/A

External syllabus support. N/A

SFAM-503

4.0 E CPT/OFT S

Goal. Refine device operation and instructional techniques.

Requirement. Review FAM-502.

Performance Standard. IUT FE shall perform responsibilities/duties IAW NFM.

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

Ordnance. N/A

External syllabus support. N/A

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 FE shall perform responsibilities/duties IAW NFM.

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

Ordnance. N/A

External syllabus support. N/A

250. REQUIREMENTS, QUALIFICATIONS AND DESIGNATIONS

1. Purpose. To provide a vehicle for tracking codes associated with qualifications and designations.

2. General

a. 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. For example, RQD-635 may be flown in conjunction with DACMG-363. 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.

b. After the commanding officer has designated the FE in writing as a FE I or a FE II, the operations department shall log RQD-681 (FE I) and RQD-680 (FE II) respectively.

3. Engine Run/Taxi qualifications

a. Purpose. Designate the FE 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.

b. Ground Use of Aircraft Training (2 Events, 2.0 Hours)

RQD-600 Engine Run Designation 1.0 R E 1 KC-130 A

Goal. Evaluate FE on engine run procedures.

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

Performance Standard. Qualified per MIMS, NFM, and local course rules and DSS program.

RQD-601 Taxi Pilot Designation 1.0 R E 1 KC-130 A

Goal. Evaluate FE on taxi procedures.

Requirement. NATOPS Pilot Instructor/Evaluator will evaluate FE on taxi procedures

Performance Standard. Qualified per NFM, 3710.7_ and local course rules.

Flight Training (1 Flight, 2.0 Hours)

RQD-602 Functional Check Flight 2.0 1 KC-130 A

Goal. Qualify and maintain currency for the FE 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 OPNNAVINST 4790.2__.

4. Night Systems Qualification (NSQ)

a. Purpose. NSQ qualification.

b. General. FE 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 Flight, 4.0 Hours)

RQD-611 Night Systems Qualified 2.0 1 KC-130 A NS

Goal. Night Systems Qualification, qualify the FE in flights involving the utilization of Night Vision Devices.

Requirement. The FE will demonstrate the ability to perform crew specific duties utilizing night devices. 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, TACNAV-223, TACNAV-224, RQD-681.

5. Flight Engineer Evaluations

a. Purpose. Evaluate the student FE per NATOPS procedures.

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

c. Crew Requirements. Minimum crew and FE assistant NATOPS instructor.

d. Flight Training (6 Flights, 24.0 Hours)

RQD-680 4.0 E 1 KC-130/OFT/WST 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 FE shall perform responsibilities/duties IAW NFM, 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. Should be either AR, AD, LL, TLZ, RGR, or combination mission. RON flight is preferred.

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

Prerequisite. FAM-200 through FAM-280, RQD-611.

RQD-682 4.0 R, E 1 KC-130 A

Goal. Annual NATOPS evaluation and subsequent annual evaluations.

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

Performance Standard. FE under evaluation shall perform responsibilities/duties IAW NFM, 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

Goal. Assistant NATOPS Instructor Designation.

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

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

Prerequisite. RQD-611, RQD-690

RQD-684 4.0 R, E 1 KC-130 A

Goal. NATOPS Instructor Designation.

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

Performance Standard. FE under instruction shall perform responsibilities/duties IAW NFM, 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

Goal. FE Instructor Designation.

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

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

Prerequisite. SFAM-500 through SFAM-504.

6. Night System Instructor Certification

a. Purpose. NSI Qualification for FE.

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 Core Skill Advanced 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 Flight, 2.0 Hours) (Refer to MAWTS-1 Course Catalog).

RQD-691 2.0 E 1 KC-130 A N 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, AND RQD-612.

7. Weapons and Tactics Instructor (WTI)

a. Purpose. Certify the KC-130 FEI as a Weapons and Tactics Instructor capable of safely conducting ground and airborne instruction in the KC-130 Crewmember Core Skill Advanced and Core Skill Plus flight syllabus.

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 2.0 E 1 KC-130 A N NS

Goal. Demonstrate proficiency of the instructional skills required to conduct crewmember tactical training in the Core Skill Advanced and Core Skill Plus stages of 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.

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261. SYLLABUS MATRIX

STAGE	CODE	HRS	SIM HRS	REFLY	CRP	R	E	
SFM	100		2.0	*	1.0			
SFM	101		2.0	*	1.0			
SFM	102		2.0	*	1.0			
SFM	103		2.0	*	1.0			
SFM	104		2.0	*	2.0	X	X	
SFM	105		2.0	*	1.0			
SFM	106		2.0	*	1.0			
SFM	107		2.0	*	1.0			
SFM	108		2.0	*	1.0			
SFM	109		2.0	*	1.0			
SFM	110		2.0	*	1.0			
SFM	111		2.0	*	1.0			
SFM	112		2.0	*	1.0			
SFM	113		2.0	*	1.0			
SFM	114		4.0	*	2.0	X	X	
FAM	115	4.0		*	1.0	X		
FAM	116	4.0		*	1.0	X		
FAM	117	4.0		*	1.0	X		
FAM	118	4.0		*	1.0	X		
FAM	119	4.0		*	1.0	X		
FAM	120	8.0		*	2.0	X		
REV	130	4.0		*	1.0			
REV	131	4.0		*	1.0			
REV	132	4.0		*	1.0			
REV	133	4.0		*	1.0	X		
REV	134	4.0		*	1.0			
REV	135	4.0		*	1.0			
REV	136	4.0		*	1.0			
REV	137	4.0		*	1.0			
REV	138	4.0		*	1.0			
REV	139	4.0		*	1.0			
REV	140	4.0		*	1.0	X		
REV	141	4.0		*	1.0	X		
REV	142	4.0		*	1.0			
CHK	150	4.0		*	2.0	X	X	
SMGR	160	3.0		*	2.0			
SMGR	161	3.0		*	2.0			
SFCF	162	4.0		*	2.0			
SFCF	163	4.0		*	2.0			
MGR	164	3.0		*	2.0			
MGR	165	3.0		*	2.0			
MGRCK	166	3.0		*	2.0	X		

CORE SKILL INTRODUCTION TRAINING

STAGE	CODE	HRS	SIM HRS	REFLY	CRP	R	E	
FCF	167	4.0		*	2.0	X		
MFAM	170	4.0		*	1.0			
MFAM	171	4.0		*	1.0			
MFAM	172	4.0		*	1.0			
MFAM	173	4.0		*	1.0			
MFAM	174	4.0		*	1.0			

CORE SKILL BASIC

STAGE	CODE	HRS	REFLT	CRP	REMARKS
FE	200	2.0	90	1.0	(N)
NS	204	2.0	180	1.0	N
NS	205	2.0	180	1.0	N
AR	210	4.0	180	0.5	
AR	211	4.0	365	0.5	N
AR	212	4.0	180	0.5	
AR	213	4.0	365	0.5	N
TACNAV	220	2.0	365	0.5	
TACNAV	223	2.0	365	0.5	N
TACNAV	224	2.0	180	1.0	N
FORM	231	2.0	180	1.0	2 AC
AD	241	2.0	365	1.0	
AD	242	2.0	365	1.0	NS
LRNAV	250	8.0	365	1.0	
THR	261	2.0	365	1.0	
ALZ	271	2.0	180	1.0	
ALZ	272	2.0	365	0.5	N
ALZ	273	2.0	365	0.5	N
RGR	274	0.0	365	1.0	

CORE SKILL ADVANCED

STAGE	CODE	HRS	REFL	CRP	REMARKS
TACNAV	321	3.0	*	10.0	
THR	360	4.0	*	10.0	

CORE PLUS

STAGE	CODE	HRS	REFLT	CRP	REMARKS
TACNAV	422	2.0	*	1.0	N
AD	442	2.0	*	1.0	
AD	444	2.0	*	1.0	N
DEFTAC	461	2.0	*	0.5	
DEFTAC	462	2.0	*	0.5	
ALZ	471	2.0	*	1.0	N

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INSTRUCTOR TRAINING

STAGE	CODE	HRS	REFLT	CRP	E	REMARKS
SFAM	500	4.0	*	*	X	SIM
SFAM	501	4.0	*	*	X	SIM
SFAM	502	4.0	*	*	X	SIM
SFAM	503	4.0	*	*	X	SIM
SFAM	504	4.0	*	*	X	SIM

REQUIREMENTS, QUALIFICATIONS, AND DESIGNATIONS

STAGE	CODE	HRS	TRACK	A/C OR SIM	R	E	NOTES
RQD	600	1.0		A/C	X	X	HIGH/LOW POWER TURN-UP DESIGNATION
RQD	601	1.0		A/C	X	X	TAXI PILOT DESIGNATION
RQD	602	2.0		A/C			FUNCTIONAL CHECK FLIGHT
RQD	611	2.0		A/C			NSQ
RQD	680	4.0		A/C		X	FE-2 NATOPS CHECK
RQD	681	4.0		A/C	X	X	FE-1 NATOPS CHECK
RQD	682	4.0		A/C	X	X	FE ANNUAL NATOPS
RQD	683	4.0		A/C	X	X	ANI DESIGNATION
RQD	684	4.0		A/C	X	X	NI DESIGNATION
RQD	690	4.0	X	A/C	X	X	FEI DESIGNATION
RQD	691	2.0		A/C		X	NSI DESIGNATION
RQD	692	2.0		A/C		X	WTI DESIGNATION

262. T&R CHAINING TABLES. Event chaining allows for the completion of more complex and/or advanced events using the same skills to update proficiency status of events. Only events in a sequence entailing demonstration of equivalent skills shall be chained.

a. When a T&R event is logged, the proficiency dates of other T&R events (usually lower in number) may be updated. The T&R code that is logged is known as the "chaining code," and the updated codes are "chained codes." Chained codes are not always updated when a chaining code is logged.

b. Conditional Chaining. The following environmental conditions further specify which T&R codes are chain-updated.

(1) Night Optional. Chained codes annotated with parentheses around them, e.g. (200), are only chain-updated if the chaining code is flown at night.

(2) Night Systems Optional. Chained codes annotated with parentheses and "NS" after them, e.g. (200 NS), are only chain-updated if the chaining code is flown using night systems.

(3) Light Level Optional. Chained codes annotated with parentheses and "HLL" after them, e.g. (200 HLL), are only chain-updated if the chaining code is flown using night systems during a high light level period. Chained codes annotated with parentheses and "LLL" after them, e.g. (200 LLL), are only chain-updated if the chaining code is flown using night systems during a low light level period.

c. Syllabus Event Conversion Matrix. The matrix is used to convert Stage and Training Code events from the previous KC-130FRT T&R Manual to the Stage and Training Codes contained within this Manual. The automated flight scheduling tool, Squadron Assistance Risk Assessment (SARA), will automatically convert and update the previous Stage and Training Codes

contained under the Old Primary column to the New Stage and Training Codes. There is a possibility that more than one old Stage and Training Code could map to the New Stage and Training Codes. Therefore, the column "Old Secondary" was established. Due to software shortcomings in the SARA program, SARA can only map one old code to the new code. It is the responsibility of the local SARA administrator to manually map "Old Secondary" codes to the new Stage and Training Codes.

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EVENT UPDATE CHAINING

<u>FLIGHT</u>	<u>FLIGHTS UPDATED</u>
200	
204	200
205	200, 204
210	200
211	200, 210
212	200
213	200, 212
220	200
223	200, 220
224	200, 220, 223
231	200
241	200
242	200, 204, 205, 241
250	200
261	200, 220
271	200
272	200, 204, 205, 271
273	200, 204, 205, 273, 274
274	200
313	200, 204, 205, 212, 213
321	200, 220
360	200, 220, 261
422	200, 220
442	200, 241
444	200, 241
461	200, 220
462	200, 220, 461
471	200, 271

Syllabus Event Conversion Matrix		
STAGE AND TRAINING CODE - NEW	STAGE AND TRAINING CODE - OLD PRIMARY	STAGE AND TRAINING CODE - OLD SECONDARY
SFAM-100	SFAM-100	
SFAM-101	SFAM-101	
SFAM-102	SFAM-102	
SFAM-103	SFAM-103	
SFAM-104	SFAM-104	
SFAM-105	SFAM-105	
SFAM-106	SFAM-106	
SFAM-107	SFAM-107	
SFAM-108	SFAM-108	
SFAM-109	SFAM-109	
SFAM-110	SFAM-110	
SFAM-111	SFAM-111	
SFAM-112	SFAM-112	
SFAM-113	SFAM-113	
SFAM-114	SFAM-114	
FAM-115	FAM-115	
FAM-116	FAM-116	
FAM-117	FAM-117	
FAM-118	FAM-118	
FAM-119	FAM-119	
FAM-120	FAM-120	
REV-130	REV-130	
REV-131	REV-131	
REV-132	REV-132	
REV-133	REV-133	
REV-134	REV-134	
REV-135	REV-135	
REV-136	REV-136	
REV-137	REV-137	
REV-138	REV-138	
REV-139	REV-139	
REV-140	REV-140	
REV-141	REV-141	
REV-142	REV-142	
CK-150	CK-150	
SMGR-160	SMGR-160	
SMGR-161	SMGR-161	
SFCF-162	SFCF-162	
SFCF-163	SFCF-163	
MGR-164	MGR-164	
MGR-165	MGR-165	
MGRCK-166	MGRCK-166	
FCF-167	FCF-167	
MFAM-170	MFAM-170	
MFAM-171	MFAM-171	
MFAM-172	MFAM-172	
MFAM-173	MFAM-175	
MFAM-174	MFAM-176	

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STAGE AND TRAINING CODE - NEW	STAGE AND TRAINING CODE - OLD PRIMARY	STAGE AND TRAINING CODE - OLD SECONDARY
FE-200	FE-200	
NS-204	NVG-601	
NS-205	NVG-601	
AR-210	AR-210	
AR-211	AR-211	
AR-212	AR-212	
AR-213	AR-213	
TACNAV-220	LL-220	
TACNAV-223	NVG-621	
TACNAV-224	LL-221	
FORM-231	FORM-231	
AD-241	AD-240	
AD-242	NVG-640	
LRNAV-250	OWICAO-250	
THRX-261	ASE-360	
ALZ-271	TLZ-270	
ALZ-272	NVG-670	
ALZ-273	NVG-671	
RGR-274	RGR-273	
TACNAV-321	LAT-434	
THRX-360	ASE-360	
TACNAV-422	LL-221	
AD-442	AD-340	
AD-444	AD-343	
DEFTAC-461	DEFTAC-460	
DEFTAC-462	DEFTAC-461	
ALZ-471	TLZ-371	
FAM-500	FAM-500	
FAM-501	FAM-501	
FAM-502	FAM-502	
FAM-503	FAM-503	
FAM-504	FAM-504	
RQD-600		
RQD-601		
RQD-602	FCF-280	
RQD-611	NVG-690	
RQD-680	CK-190	
RQD-681	CK-290	
RQD-682	CK-390	
RQD-683	NATOPS-591	
RQD-684	NATOPS-591	
RQD-690	FEI-690	
RQD-691	NSI-593	
RQD-692	WTI-594	