

Requirement

Practice:

All FAM stage maneuvers.
Instrument stage maneuvers.
Confined area landings.
External cargo procedures.
If possible, formation flight.

Performance Standards. Per CH-53 NATOPS and FRS Standardization Manual. RAC is responsible for all emergency procedures in the NATOPS Manual.

Prerequisite. For CH-53D Series Conversion and Refresher POI individuals: CH-53D NATOPS open book exam.

Range Requirements. CAL/MAL site.

9. Core Skill Introduction Check (CSIX)

a. Purpose. To demonstrate proficiency in performing the duties as a core skill introduction copilot per CH-53 NATOPS and appropriate pubs.

b. General

(1) The RAC is responsible for all maneuvers and emergency procedures in the Core Skill Introduction phase.

(2) A CH-53 NATOPS qualified instructor shall evaluate this flight.

c. Crew Requirement. IP/RAC/CC.

d. Ground Training. Per the CH-53 NATOPS Flight Manual and OPNAVINST 3710.7, all RACs shall successfully complete an open and closed book test prior to CSIX. Upon completion of this flight, the RAC will be CH-53 NATOPS qualified in model as a Helicopter 2nd Pilot (H2P).

CSIX-191 2.0 MR,R,SCE,SCD E 1 CH-53

Goal. Evaluate systems knowledge of the CH-53 and the capability to perform maneuvers in the Core Skill Introduction phase, including high AOB maneuvers.

Requirement

Practice:

Evaluate systems knowledge of the CH-53 to include external lift systems.
Brief and demonstrate proficiency of all aircraft emergency procedures per the CH-53 NATOPS Flight Manual.
Demonstrate proficiency and the capability to perform in the Core Skill Introduction to include takeoffs, approaches, instrument procedures, emergency procedures, CALs, high AOB maneuvers, and landings.

Performance Standards. Per CH-53 NATOPS and FRS Standardization Manual.

Prerequisite. Open and Closed book NATOPS exams.

Range Requirements. CAL/MAL site.

132. CORE SKILL BASIC. Pilots undergoing instruction in this level must have completed the MAWTS-1 Course Catalog Academic Support Package lectures applicable to this phase of training prior to conducting NS flights. NS rules of conduct will be per T&R Program Manual. Pilots shall fly all NS events in this level under ambient light conditions of .0022 LUX or greater. A PUI is NSQ HLL (qualified to transport troops in HLL conditions) when the following flights have been completed: SFAM-202, FORM-211, CAL-222, CAL-223, CAL-224, TERF-232, TERF-233, and TAC-291. Aircrew not NSQ HLL require supervision of an NSI for all events flown with NS. Additionally, all PUIs not proficient for a particular event require the supervision of an NSI. (GTR-250 does not require an NSI if both pilots are NSQ HLL.)

1. Familiarization/Instruments (FAM/INST)

a. Purpose. To review day and night familiarization maneuvers, navigation procedures, basic instrument procedures, and introduce and review NS devices.

b. General

(1) Pilots will find familiarization maneuver descriptions in the NATOPS Manual.

(2) The NATOPS Instrument Flight Manual defines basic instrument procedures. All instrument stage flights should terminate with an instrument approach when possible.

(3) The MAWTS-1 NVD Manual and the NTRP 3-22.4-CH53 provide NS guidance.

c. Crew Requirement. FAM/INST-200,202: P/P. FAM/INST-201: P/P/CC.

d. Simulator Training. (2 Periods, 3.0 Hours).

e. Flight Training. (1 Flight, 1.5 Hours).

FAM/INST-200 1.5 R,SC S (N)

Goal. Review normal, emergency, and instrument procedures.

Requirement

Discuss:

Basic FAM maneuvers.
Emergency procedures.
Operating limitations.
Basic instrument procedures.
Precision and non-precision approaches.
If flown at night, discuss night lighting and use, night scan, and fixation.

Review:

Basic FAM maneuvers.

Emergency procedures.
Operating limitations.
Basic instrument procedures.
Precision and non-precision approaches.

Performance Standards. Per CH-53 NATOPS and Instrument Flight Manual.

External Syllabus Support. WST/APT.

FAM/INST-201 1.5 R 1 CH-53 (N)

Goal. Review normal, emergency, and instrument procedures.

Requirement

Discuss:

Same as FAM/INST-200.

Review:

Same as FAM/INST-200.

Performance Standards. Same as FAM/INST-200.

Prerequisite. FAM/INST-200.

FAM/INST-202 1.5 S/A NS

Goal. Introduce the operation and capabilities of aircraft NS.

Requirement

Discuss:

CRM utilizing NS.
NS emergency procedures.
Night scan and fixation.
Aircraft lighting.
NS preflight, donning, and adjustment procedures.
ANVIS-7 Heads-Up Display (HUD).
HUD operation, limitations, switchology,
functionality/image.

Introduce:

CRM utilizing NS.
NS emergency procedures.
Night scan and fixation.
Aircraft lighting.
NS preflight, donning, and adjustment procedures.
ANVIS-7 Heads-Up Display (HUD).
HUD operation, limitations, switchology,
functionality/image.

Performance Standards. Demonstrate basic proficiency and knowledge of switchology and the operation of NS.

External Syllabus Support. WST/APT. If unavailable, a static aircraft is acceptable. No intent to fly.

2. Formation (FORM)

- a. Purpose. To review formation and introduce tactical formation maneuvering.
- b. General. Pilots may find a description of these maneuvers and formations in ANTP 3-22.3-CH53 and the MAWTS-1 Academic Support Package.
- c. Crew Requirement. P/P/CC/AO.
- d. Ground Training. Review tactical formation flight in ANTP 3-22.3-CH53.
- e. Flight Training. (2 Flights, 2.0 Hours).

FORM-210 1.0 R,SC 2 CH-53

Goal. Conduct day formation and introduce tactical formation maneuvering.

Requirement

Discuss:

CRM.
Comfort level.
Closure rates.
Formation maneuvers: Break turns, center turns, pinch/dig, cover, tac turns, in-place turns, split turns, and cross turns.
Combat spread, combat cruise, and parade positions.
Cruise Turn principles.
Recovery from unusual attitudes.
Loss of visual contact.
Lost communications.
Inadvertent IMC procedures.
High density altitude.
High AOB turns/aerodynamics performance.
Inter- and intra-aircraft communications.
Lead changes; include EMCON lead change.

Introduce:

Inadvertent IMC breakup and rendezvous.
Break turns, center turns, pinch/dig, cover, tac turns, in-place turns, split turns, and cross turns.
Combat spread and combat cruise formations.

Review:

Parade position.
Cruise principles.
Crossovers.
Full COMM and no COMM lead changes.

Performance Standards. Successfully execute all TACFORM maneuvers as lead and wingman IAW ANTP 3-22.3-CH53.
Successfully execute inadvertent IMC breakup and rendezvous IAW RW TACSOP.

FORM-211 1.0 R 2 CH-53 NS

Goal. Conduct NS formation flight and navigation.

Requirement

Instructor:

NSI required for initial qualification and re-qualification.

Discuss:

Aircraft lighting.
Night tactical formation.
Closure rate.
Recovery from unusual attitudes.
CRM.
Comfort level.
NS emergencies.
Inadvertent IMC.
Dead reckoning techniques.
Low level hazards.
N-PFPS Mission Planning.
HNVS considerations.

Introduce:

NS formation flight.
NS navigation to include GPS and HNVS checkpoint identification.

Review:

Combat Spread/Combat Cruise Formation principles.

Performance Standards. Per ANTTP 3-22.3-CH53 and MAWTS-1 NVD Manual. Remain oriented IAW RW TACSOP Magellan criteria while navigating to a minimum of 6 checkpoints while using 1:250,000 and 1:50,000 scale maps. Minimum altitude 200 feet AGL. Conduct at least 1 full COMM and 1 no COMM lead change.

Prerequisite. FORM-210.

3. Confined Area Landings (CAL)

- a. Purpose. To conduct takeoffs and landings in confined/mountainous areas in the day and night environment.
- b. General. Read paragraph 132.
- c. Crew Requirement. CAL-220,221: P/P/CC. CAL-222,223,224: P/P/CC/AO.
- d. Flight Training. (5 Flights, 7.5 Hours).

CAL-220 1.5 1 CH-53

Goal. Conduct single-ship confined area approaches, landings, and departures and introduce tactical approaches to confined areas/mountainous terrain.

Requirement

Discuss:

CRM.
Dynamic rollover.
Crosswind approaches.
Limitations on landing on unprepared and uneven surfaces.
Power settling.
Settling with power.
Low altitude emergencies.
Loss of visual reference during landing and takeoff.
Engine emergencies.
Obstacle clearance.
High gross weight takeoffs/landings.
Maneuvering at high gross weight/density altitude (GW/DA).
High AOB turns/aerodynamic performance.
HNVS capabilities and limitations.
LZ Diagram briefing and planning considerations.

Introduce:

Crosswind approaches.
Loss of visual reference during landing and takeoff.
Obstacle takeoffs and approaches.
High gross weight takeoffs/landings.
LZ Diagrams.
Landing and departures to/from a CAL/MAL site.

Review:

Normal approaches.
Precision approaches.
Hover and no hover landings.
Low altitude emergencies.

Performance Standards. Pilot shall fly pattern within 50' and 10 kts of briefed altitude/airspeed. Land within 2 rotors of designated landing point. Conduct a minimum of 5 landings which shall consist of a precision approach, a normal approach, a hover and a no hover landing, and a max gross weight takeoff and landing. Simulated high GW takeoffs and landings power shall be limited to 5 percent above 10' hover power. Maintain safe obstacle clearance.

Prerequisite. FAM/INST-201.

Range Requirements. CAL/MAL site.

CAL-221

1.5 R,SC 2 CH-53

Goal. Conduct section confined area approaches, landings, and departures and introduce tactical approaches to confined areas/mountainous terrain.

Requirement

Discuss:

CRM.
Obstacle clearance.

Enclosure (1)

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Full COMM and no COMM lead changes.
Tactical formations.
Reduced visibility section landings.
Cruise turn principles (radius of turn).
Cross cockpit landings.

Review:

CAL-220 and FORM-210.
LZ diagrams planning and briefing considerations.

Performance Standards. Pilot shall fly pattern within 50' and 10 kts of briefed altitude/airspeed. Land within 2 rotors of designated landing point (lead) and maintain section integrity during approach and landing (wingman). Conduct a minimum of 4 landings as lead and 4 landings as wingman. Maintain safe obstacle clearance.

Prerequisite. CAL-220 and FORM-210.

Range Requirements. CAL/MAL site.

CAL-222

1.5 1 CH-53 NS

Goal. Conduct single-ship confined area approaches, landings, and departures and introduce tactical approaches to confined areas/mountainous terrain utilizing NS, emphasizing low work.

Requirement

Instructor:

NSI required for initial qualification and re-qualification.

Discuss:

CRM.
Landing zone Lighting.
Cockpit lighting.
Low altitude emergencies.
NS failures.
Inadvertent IMC procedures.
Landings with reduced visibility.
Wave-offs.
HNVS capabilities and limitations.
Electro-Optic Tactical Decision Aid (EOTDA Data).
Solar Lunar Almanac Program (SLAP).
Night fixation and scan techniques.

Introduce:

NS CALs/MALs.
NS low work.

Review:

FAM/INST-202.
CAL-220.

Performance Standards. Same as CAL-220.

Prerequisite. FAM/INST-202, CAL-220.

Range Requirements. CAL/MAL site.

CAL-223 1.5 R,SC 2 CH-53 NS

Goal. Conduct section confined area approaches, landings, and departures and introduce tactical approaches to confined areas/mountainous terrain utilizing NS.

Requirement

Instructor:
NSI required for initial qualification and re-qualification.

Discuss:
Same as CAL-221 and CAL-222.

Introduce:
Section takeoffs, approaches, landings, using NS.
Capabilities and effects of all aircraft exterior lighting.

Review:
FORM-211, CAL-221, and CAL-222.

Performance Standards. Same as CAL-221.

Prerequisite. CAL-221, CAL-222, and FORM-211.

Range Requirements. CAL/MAL site.

CAL-224 1.5 R,SC 1 CH-53 NS

Goal. Introduce ANVIS-7 (HUD) and develop proficiency with CH-53 NS to include HNVS and NS.

Requirement

Instructor:
NSI required for initial qualification and re-qualification.

Discuss:
CRM utilizing NS.
ANVIS-7 Heads-Up Display.
Operation.
Limitations.
Switchology.
Functionality/Image.
HNVS.

Introduce:
ANVIS-7 (HUD).
NS Low Work with HUD.
NS Pattern work with HUD.

Review:

Low work.
Pattern work CAL/MAL.
FAM/INST-202 and CAL-222.

Performance Standards. Per MAWTS-1 NVD Manual. Same as
FAM/INST-202 and CAL-220.

Prerequisite. CAL-222.

Range Requirements. CAL/MAL site.

4. Terrain Flight (TERF)

a. Purpose. To conduct TERF maneuvers/navigation and section
maneuvering in the day and night TERF environment.

b. General

(1) TERF rules of conduct are IAW T&R Program Manual and local SOPs.
A description of all TERF maneuvers can be found in ANTTP 3-22.3-CH53.

(2) Read paragraph 132.

(3) A PUI is TERF qualified when the following flights have been
completed: TERF-230 and TERF-231.

(4) The supervision of a TERFI is required for all events where the
PUI is not proficient.

c. Crew Requirement. P/P/CC/AO.

d. Ground Training. Completion of MAWTS-1 Course Catalog Academic
Support Package TERF lectures prior to commencing this stage of training.

e. Flight Training. (4 Flights, 6.0 Hours).

TERF-230 1.5 1 CH-53

Goal. Conduct single ship TERF maneuvers and navigation.

Requirement

Instructor:

TERFI required for initial qualification and re-qualification.

Discuss:

TERF profiles and maneuvers IAW ANTTP 3-22.3-CH53.
TERF rules of conduct IAW T&R Program Manual and local
SOPs.
Operational power checks.
Comfort levels.
CRM.
Common terminology.
Route and checkpoint selection.
Route planning tools (N-PFPS).
Orientation techniques.

Map preparation.
Maneuvering at low altitude and high gross weight/high density altitude.
High AOB turns/aerodynamic performance.
Low altitude emergencies.
Obstacle clearance.
Aircraft navigation system.

Introduce:

Plan and brief a TERF route.
Masking/unmasking.
Quick stop.
TERF turn and roll.
Bunts.
Low level and contour profiles.
Tactical approaches.
Operational Power Checks (OPCs).
Single Point Performance Checks (SPPCs).

Performance Standards. Remain oriented IAW RW TACSOP Magellan criteria while navigating to a minimum of 6 checkpoints while using 1:250,000 and 1:50,000 scale maps at or below 200' AGL. To the maximum extent possible route should be a minimum of 50 nm. Demonstrate proficiency with aircraft navigation systems. Conduct at least 1 full COMM and 1 no COMM lead change.

Prerequisite. FAM/INST-201.

Range Requirements. Approved TERF maneuver area/route.

TERF-231

1.5 R,SC 2 CH-53

Goal. Conduct section TERF maneuvers and navigation.

Requirement

Instructor:

TERFI required for initial qualification and re-qualification.

Discuss:

Same items as in TERF-230, as it applies to section TERF concepts.
Tactical flight considerations per ANTP 3-22.3-CH53.
Tactical formation maneuvers in a TERF environment per ANTP 3-22.3-CH53.

Review:

Same as TERF-230 and FORM-210.

Performance Standards. Same as TERF-230 and incorporate tactical formation maneuvering in the navigation of the route. Perform 1 full COMM and 1 no COMM lead change.

Prerequisite. TERF-230 and FORM-210.

Range Requirements. Approved TERF maneuver area/route.

TERF-232

1.5 R,SC 1 CH-53 NS

Goal. Conduct single ship TERF maneuvers and navigation while using NS.

Requirement

Instructor:

NSI required for initial qualification and re-qualification.

Discuss:

Same as TERF-230.
TERF navigation considerations while using NS.
HNVS capabilities and limitations.
Cockpit lighting.
Low altitude emergencies.
NS failures.
Inadvertent IMC procedures.
Electro-Optic Tactical Decision Aid (EOTDA Data).
Solar Lunar Almanac Program (SLAP).
Night fixation and scan techniques.

Introduce:

TERF navigation flight while using NS.

Review:

TERF-230.
HNVS operations.

Performance Standards. Remain oriented IAW RW TACSOP Magellan criteria while navigating to a minimum of 6 checkpoints while using 1:250,000 and 1:50,000 scale maps at or below 200' AGL. To the maximum extent possible route should be a minimum of 50 nm. Demonstrate proficiency with aircraft navigation systems.

Prerequisite. FAM/INST-202 and TERF-230.

Range Requirements. Approved TERF maneuver area/route.

TERF-233

1.5 R,SC 2 CH-53 NS

Goal. Conduct section TERF maneuvers and navigation while utilizing NS.

Requirement

Instructor:

NSI required for initial qualification and re-qualification.

Discuss:

Same as TERF-231 and TERF-232.

Introduce:

Section TERF navigation while utilizing NS.

Review:
Same as TERF-231 and TERF-232.

Performance Standards. Same as TERF-232.

Prerequisite. FORM-211, TERF-231, and TERF-232.

Range Requirements. Approved TERF maneuver area/route.

5. External Loads (EXT)

a. Purpose. To develop skills necessary for external loads in confined areas and operating the aircraft near its maximum gross weight for the given ambient conditions in the day and night environment.

b. General

(1) Review operational and safety considerations discussed in the appropriate NATOPS Flight Manual and MCRP 4-23E and Multi-Service Helicopter Sling Load Manual.

(2) Read paragraph 132.

c. Crew Requirement. P/P/CC/AO.

d. External Syllabus Support. HST.

e. Flight Training. (5 Flights, 7.5 Hours).

EXT-240 1.5 1 CH-53

Goal. Conduct single point external operations.

Requirement

Discuss:

CRM.
Comfort level.
Preflight planning to include power computations, weight and balance considerations, Operational Power Checks, and Single Point Performance Checks.
External load information/characteristics.
Hook preflight/Hook checks.
Fuel Dump procedures/Aux tank jettison.
Form F.
Power settling.
Emergency procedures during external operations.
Cargo jettison procedures.
Switchology.
Inadvertent hook release.
Pilot Induced Oscillations (PIO).
HST operation and safety brief.
Wave-off with the load.
Reduced visibility conditions.
Precision approach techniques.

Introduce:

Single point external operations to a confined area.
Compute power requirements/margin based on cockpit indications while in pickup/drop off zone.
External lift procedures.
In-flight weight and power computations.
Operational Power Checks (OPCs).
Single Point Performance Checks (SPPCs).

Performance Standards. Execute five pickups and deliveries or demonstrate proficiency as defined by the ability to fly within 50' and 10 kts of briefed altitude and airspeed, and deliver load within 5 meters of intended point of delivery and +/- 10 degrees of assigned heading.

Prerequisite. CAL-220.

Range Requirements. Approved CAL/MAL site.

External Syllabus Support. HST, single point loads.

EXT-241

1.5 R,SC 1 CH-53

Goal. Conduct dual point external operations (53E).

Requirement

Discuss:

Same as EXT-240.

Introduce:

Dual point external operations to a confined area.
External lift procedures.
In-flight weight and power computations.
Operational Power Checks (OPCs).
Single Point Performance Checks (SPPCs).
Compute power requirements/margin based on cockpit indications while in pickup/drop off zone.

Performance Standards. Execute 5 pickups and deliveries or demonstrate proficiency as defined by the ability to fly within 50' and 10 kts of briefed altitude and airspeed, and deliver load within 5 meters of intended point of delivery and +/- 10 degrees of assigned heading.

Prerequisite. CAL-220.

Range Requirements. Approved CAL/MAL site.

External Syllabus Support. HST, dual point load (53E).

EXT-242

1.5 R,SC 1 CH-53

Goal. Conduct external flight in the TERF profile.

Requirement

Instructor:
TERFI required for all PUIs not proficient in this event.

Discuss:
Same as EXT-240 or EXT-241.
Terrain/obstacle clearance.
Route planning considerations.

Introduce:
TERF externals.

Review:
Single and/or dual point procedures.
TERF maneuvers.

Performance Standards. Fly within 50' and 10 kts of briefed altitude and airspeed. Maintain situational awareness with regards to load clearance and limited power considerations while conducting TERF maneuvers. Minimum of one pickup and delivery required.

Prerequisite. CAL-220, TERF-230 and EXT-240 or EXT-241.

Range Requirements. Approved CAL/MAL site. Approved TERF maneuver area/route.

External Syllabus Support. HST, single or dual point load.

EXT-243 1.5 1 CH-53 NS

Goal. Conduct NS single point external operations.

Requirement

Instructor:
NSI required for initial qualification and re-qualification.

Discuss:
Same as CAL-222 and EXT-240.

Introduce:
NS single point externals to a confined area.

Review:
EXT-240 and CAL-222.

Performance Standards. Same as EXT-240.

Prerequisite. CAL-222 and EXT-240.

Range Requirements. Approved CAL/MAL site.

External Syllabus Support. HST, single point load.

EXT-244 1.5 R, SC 1 CH-53 NS

Enclosure (1)

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Goal. Conduct NS dual point externals (53E).

Requirement

Instructor:

NSI required for initial qualification and re-qualification.

Discuss:

Same as CAL-222 and EXT-241.

Introduce:

NS dual point (53E) externals to a confined area.

Review:

Same as CAL-222 and EXT-241.

Performance Standards. Same as EXT-241.

Prerequisite. CAL-222 and EXT-241.

Range Requirements. CAL/MAL site.

External Syllabus Support. HST, dual point load.

6. Ground Threat Reaction (GTR)

a. Purpose. To introduce and develop proficiency in using Aircraft Survivability Equipment (ASE), tactics and on-board weapons systems to evade ground-to-air threats.

b. General. Pilots shall conduct this stage in a simulator against ground-to-air threats.

c. Crew Requirement. P/P.

d. Ground Training

(1) Pilots shall complete the MAWTS-1 academic syllabus for GTR, as specified in the MAWTS-1 Course Catalog, prior to commencing the flight phase.

(2) Review applicable chapters of ANTTP 3-22.3-CH53 for EW/IR countermeasures, ASE, and tactical formation maneuvering. Consult the AFTTP 3-1 for threat systems information.

e. Simulator Training. (1 Period, 1.5 Hours).

GTR-250 1.5 SC S (NS)

Goal. Introduce ground threat reactions and ASE.

Requirement

Instructor:

WTI or DMI required when the PUI is not proficient.

Discuss:

Operation of the ALE-39/47, AFR-39, ALQ-157, and AAR-47.
The strengths and weaknesses of each ASE system versus ground-to-air threats.
CRM.
Different tactical EW/IR countermeasures.
Tactical maneuvering to counter the threat.
Inter- and intra-aircraft communications and standard terminology.
Threat identification and rules of engagement.
Lookout doctrine.

Introduce:

Search, acquisition, track, and missile alert signals of all applicable threat systems on APR-39/47 and AAR-47.
Tactical maneuvering and ASE employment to counter the threat.
Inter- and intra-aircraft communications and standard terminology.

Performance Standards. Effectively maneuver aircraft against various ground-based threats. Utilize standard terminology in inter- and intra-aircraft communications. Demonstrate working knowledge of ASE.

Prerequisite. MAWTS-1 DM class.

External Syllabus Support. WST/APT with operable ASE.

7. Aerial Refueling (AR) (CH-53E)

a. Purpose. To introduce AR.

b. General. Discuss and become thoroughly familiar with all AR procedures and aspects of CRM as described in the CH-53E NATOPS Manual and the NATOPS Air Refueling Manual (NAVAIR 00-8-T-110).

c. Crew Requirement. P/P.

d. Ground Training. Pilots shall consult the MAWTS-1 Course Catalog for the recommended lectures in the Academic Support Package applicable to this stage of flight, in addition to the MAWTS-1 NVD Manual and ANTP 3-22.3-CH53.

e. Simulator Training. (1 Period, 1.0 Hour).

AR-260 1.0 SC S (NS)

Goal. Conduct aerial refueling.

Requirement

Instructor:

Supervision of an ARI is required when PUI is not proficient.

Discuss:

CRM.
Comfort level.
Rendezvous procedures, both VMC and IMC.
Voice procedures.
Join-up procedures.
Airspeeds/altitudes.
Crossovers.
Hose response/markings.
Inadvertent disconnects.
AR emergencies.

Control inputs and tip path awareness.
Blade stall.
NATOPS AR envelope chart.

Introduce:

Rendezvous/join-up.
Observation/pre-contact/contact/refuel/disconnect
positions.
Aircraft movement around the tanker.
Post AR procedures.

Performance Standards. Demonstrate the ability to perform a successful join-up and movement to the observation position. Movement to a stable pre-contact, refueling and disconnect position.

Prerequisite. Aerial refueling lecture.

External Syllabus Support. WST/APT.

8. Field Carrier Landing Practice (FCLP)

a. Purpose. To prepare for day, night, and NS carrier landings.

b. General. Discuss and become familiar with all aspects of shipboard operations and CRM applicable to the carrier qualification stage as described in the appropriate CH-53 NATOPS flight manual, LHA/LHD NATOPS, and OPNAV 3710.7. FCLP-271, FCLP-272, and FCLP-273 shall be conducted to a suitable FCLP pad.

c. Crew Requirement. FCLP-270: P/P. FCLP-271: P/P/CC. FCLP-272, 273: P/P/CC/AO.

d. Ground Training. Review shipboard operations and CQ procedures contained in the appropriate NATOPS Flight Manual, LHA/ LHD NATOPS, and OPNAV 3710.7 prior to commencing this stage of training.

e. Simulator Training. (1 Period, 1.0 Hour).

f. Flight Training. (3 Flights, 3.0 Hours).

FCLP-270 1.0 SC S (N)

Goal. Conduct day, night and NS simulated shipboard flight

operations.

Requirement

Discuss:

CRM.
Terminology.
Shipboard day and night landing patterns.
Shipboard instrument procedures.
Shipboard emergency procedures.
Blade/pylon fold procedures.

Introduce:

The LHA and LHD day and night VFR landing patterns.
TACAN and CCA approaches in IMC or night conditions.

Performance Standards. Conduct all communications with HDC and Tower. Execute proper cockpit switchology. Remain oriented around the landing pattern relative to the BRC.

Prerequisite. Shipboard qualification lecture.

External Syllabus Support. WST/APT.

FCLP-271

1.0 SC 1 CH-53

Goal. Conduct day FCLP.

Requirement

Discuss:

Same as FCLP-270.

Introduce:

FCLPs.

Review:

FCLP-270.

Performance Standards. Pilot shall fly pattern within 50' and 10 kts of briefed altitude/airspeed. Conduct a minimum of 5 landings. Initial qualification shall be performed from the right seat.

Prerequisite. Shipboard qualification lecture. CAL-220 and FCLP-270.

Range Requirements. FCLP pad.

External Syllabus Support. FCLP pad.

FCLP-272

1.0 SC 1 CH-53 N*

Goal. Conduct night, unaided FCLP.

Requirement

Enclosure (1)

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Discuss:
Same as FCLP-270.
Scan techniques.
Aircraft/deck lighting.

Introduce:
Unaided FCLP.

Performance Standards. Pilot shall fly pattern within 50' and 10 kts of briefed altitude/airspeed. Conduct a minimum of 5 landings. Initial qualification shall be performed from the right seat.

Prerequisite. FCLP-271.

Range Requirements. FCLP pad.

External Syllabus Support. FCLP pad.

FCLP-273 1.0 R,SC 1 CH-53 NS

Goal. Conduct NS FCLPs.

Requirement

Instructor:
NSI required for initial qualification and re-qualification.

Discuss:
Same as FCLP-272.
NS landing techniques.
NS emergencies.

Introduce:
NS FCLP.

Performance Standards. Pilot shall fly pattern within 50' and 10 kts of briefed altitude/airspeed. Conduct a minimum of 5 landings. Initial qualification shall be performed from the right seat.

Prerequisite. FCLP-271. If conducted under HLL conditions: CAL-222. If conducted under LLL conditions: CAL-320.

Range Requirements. FCLP pad.

External Syllabus Support. FCLP pad.

9. Aerial Gunnery (AG)

- a. Purpose. To introduce day AG employment.
- b. General. Discuss and become familiar with all aspects of AG as described in the MAWTS-1 Aerial Gunnery Manual, ASP Fundamentals of AG, the ANTP 3-22.3-CH53, and appropriate NATOPS flight manual.
- c. Crew Requirements. P/P/CC/AGO(AGUI, AGI)/TG (TGUI, TGI).

- d. Ground Training. None.
- e. Flight Training. (1 Flight, 1.0 Hours).

AG-280 1.0 R, SC 1 CH-53

Goal. Introduce day weapons employment.

Requirement

Discuss:

Door gun and tail gun nomenclature, capabilities, and limitations.
Types of ammunition and ballistic effects.
Safety considerations, malfunction procedures, jams, and hung ordnance procedures.
Range procedures and course rules.
Weapons conditions, fire control voice commands, and fire discipline.
Range estimation and target engagement procedures.
Flight profiles and weapons engagement per the ANTTP 3-22.3-CH53
Firing in approach, landing, and departure profiles.
Landing profile with tail gun installed.

Introduce:

Ordnance loading, weapons preflight and operations, and post-flight.
Implementation of fire control voice commands, and fire discipline.
Range estimation and target engagement.
Flight profiles and weapons engagement per the ANTTP 3-22.3-CH53.
Landing profile with tail gun installed.

Performance Standards. Demonstrate effective fire control voice commands and fire discipline. Maintain briefed flight profiles IAW ANTTP 3-22.3-CH53. Demonstrate appropriate target engagement IAW ANTTP 3-22.3-CH53.

Prerequisite. Read MAWTS-1 Aerial Gunnery Manual, ANTTP 3-22.3-CH53 Fundamentals of Aerial Gunnery chapter, ASP Fundamentals of AG, and appropriate NATOPS flight manual.

Ordnance. Door guns, tail gun, and ammunition.

Range Requirements. Live fire AG range (.50 cal).

10. Tactics (TAC)

- a. Purpose. To plan, brief, execute and debrief a tactical mission in a low threat environment.
- b. General

(1) The PUI will assist in the planning, briefing, and debriefing of each flight. Pilots shall use the ANTTP 3-22.3-CH53 and RW TACSOP as source

documents for planning and developing proficiency in planning, briefing, execution, and debriefing.

(2) TAC events will be flown with static .50 cal's whenever practical.

c. Crew Requirement. P/P/CC/AO.

d. Ground Training. Consult the MAWTS-1 Course Catalog for the recommended Academic Support Package lectures applicable to this stage of training.

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

TAC-290 2.0 A/S 2 CH-53

Goal. Conduct assault support tactical missions in a low threat environment.

Requirement

Discuss:

CRM.
Planning based on METT-TSL.
Route planning.
Objective area planning.
Air and ground unit coordination.
Marine Aviation Command and Control System (MACCS).
Emissions control (EMCON), Transmission Security (TRANSEC),
and Communication Security (COMSEC).
L-Hour (event versus time-driven).
ASE considerations.

Introduce:

Tactical mission analysis, planning, briefing, execution,
and debriefing in support of assigned tasks.
Objective area planning.
MACCS.
EMCON, TRANSEC, and COMSEC.
Mission smartpack.

Performance Standards. Plan and brief a tactical mission IAW RW TACSOP and ANTPP 3-22.3-CH53. Remain oriented IAW RW TACSOP Magellan criteria while navigating to a minimum of 6 checkpoints while using 1:250,000 and 1:50,000 scale maps. To the maximum extent possible route should be a minimum of 50 nm. Demonstrate proficiency with aircraft navigation systems. Arrive in LZ within + 1 minute of L-Hour and within 2 rotors of prebriefed landing point.

Prerequisite. TERF-231, CAL-221, and GTR-250 (AG-280 if .50 cal to be employed).

Ordinance. Two .50 cal (TG and .50 Cal rounds optional reference Chapter 2 of CH-53 T&R).

Range Requirements. Live fire AG range (.50 cal). CAL/MAL site. Approved TERF maneuver area/route.

TAC-291 2.0 R, SC 2 CH-53 NS

Goal. Conduct assault support tactical missions in a low threat environment at night.

Requirement

Instructor:
NSI required for initial qualification and re-qualification.

Discuss:
Same as TAC-290.
NS planning, briefing, and execution considerations

Introduce:
NS planning, briefing, and execution considerations.

Review:
TAC-290.
HNVS and HUD operations.

Performance Standards. Same as TAC-290.

Prerequisite. CAL-223, TERF-233, and TAC-290 (AG-380 if .50 cal to be employed).

Ordnance. 2 .50 cal (TG and .50 Cal rounds optional reference Chapter 2 of CH-53 T&R).

Range Requirements. Live fire AG range (.50 cal). CAL/MAL site. Approved TERF maneuver area/route.

133. CORE SKILL ADVANCED. Pilots undergoing instruction in this phase must have completed the MAWTS-1 Course Catalog Academic Support Package lectures applicable to this phase of training prior to conducting NS flights. NS rules of conduct will be per T&R Program Manual; i.e., the PUI may begin the LLL syllabus when designated NSQ HLL and EXT-243 and EXT-244 complete. A PUI is NSQ LLL (qualified to transport troops in all light level conditions) at the completion of the following flights: CAL-320, CAL-321, CAL-322, TERF-330, TERF-331, and TAC-391. Pilots shall fly the above listed flights and EXT-342 under ambient light conditions of less than .0022 LUX. Aircrew not NSQ LLL require supervision of an NSI for all events flown with NS. Additionally, all PUIs not proficient for a particular NS event require the supervision of an NSI. (GTR-350 does not require an NSI if both pilots are NSQ for the appropriate light level.)

1. Confined Area Landings (CAL)

a. Purpose. To conduct CALs in Low Light Level (LLL) conditions to a CAL/MAL site.

b. General

(1) Refer to the appropriate CH-53 NATOPS Flight Manual, ANTPP 3-22.3-CH-53, RW TACSOP, and MAWTS-1 NVD Manual for various NS considerations.

(2) Read paragraph 133.

c. Crew Requirement. P/P/CC/AO.

d. Prerequisite. PUI must be NSQ HLL, EXT-243, and EXT-243 complete.

e. Flight Training. (3 Flights, 4.5 Hours).

CAL-320 1.5 1 CH-53 NS

Goal. Conduct single ship confined area approaches, landings, and departures and introduce tactical approaches to confined areas/mountainous terrain utilizing NS under LLL conditions.

Requirement

Instructor:

NSI required for initial qualification and re-qualification.

Discuss:

Same as CAL-222.
LLL planning considerations.

Introduce:

Same as CAL-222 under LLL conditions.

Performance Standards. Same as CAL-220.

Prerequisite. NSQ HLL, EXT-243, and EXT-244.

Range Requirements. CAL/MAL site.

CAL-321 1.5 R,SC 2 CH-53 NS

Goal. Conduct section confined area approaches, landings, and departures and introduce tactical approaches to confined areas/mountainous terrain utilizing NS under LLL conditions.

Requirement

Instructor:

NSI required for initial qualification and re-qualification.

Discuss:

Same as CAL-223.
LLL planning considerations.

Introduce:

Same as CAL-223 under LLL conditions.

Performance Standards. Same as CAL-221.

Prerequisite. CAL-320.

Range Requirements. CAL/MAL site.

CAL-322 1.5 R, SC 1 CH-53 NS

Goal. Introduce ANVIS-7 (HUD) and develop proficiency with CH-53 NS to include HNVS and NS under LLL conditions.

Requirement

Instructor:
NSI required for initial qualification and re-qualification.

Discuss:
Same as CAL-224 under LLL conditions.

Introduce:
Same as CAL-224 under LLL conditions.

Review:
Low work.
Pattern work CAL/MAL.
FAM/INST-202 and CAL-222.
Performance Standards. Per MAWTS-1 NVD Manual. Same as FAM/INST-202 and CAL-220.

Prerequisite. CAL-320.

Range Requirements. CAL/MAL site.

2. Terrain Flight (TERF)

a. Purpose. To conduct TERF maneuvers/navigation and section maneuvering in the LLL TERF environment.

b. General

(1) TERF rules of conduct are IAW T&R Program Manual and local SOPs. A description of all TERF maneuvers can be found in ANTP 3-22.3-CH53.

(2) Read paragraph 133.

c. Crew Requirement. P/P/CC/AO.

d. Ground Training. Completion of MAWTS-1 Course Catalog Academic Support Package prior to commencing this stage of training.

e. Flight Training. (2 Flights, 3.0 Hours).

TERF-330 1.5 1 CH-53 NS

Goal. Conduct single ship TERF maneuvers and navigation under LLL conditions.

Requirement

Instructor:

NSI required for initial qualification and re-qualification.

Discuss:

Same as TERF-232.
LLL planning considerations.

Introduce:

Same as TERF-232 under LLL conditions.

Performance Standards. Same as TERF-232.

Prerequisite. TAC-291, EXT-243/244.

Range Requirements. Approved TERF maneuver area/route.

TERF-331

1.5 R, SC 2 CH-53 NS

Goal. Conduct section TERF maneuvers and navigation under LLL conditions.

Requirement

Instructor:

NSI required for initial qualification and re-qualification.

Discuss:

Same as TERF-231 and TERF-232.
LLL planning considerations.

Introduce:

Same as TERF-233 under LLL conditions.

Review:

Same as TERF-231 and TERF-232.

Performance Standards. Same as TERF-232.

Prerequisite. TERF-330.

Range Requirements. TERF maneuver area/route.

3. External Loads (EXT)

a. Purpose. To develop skills necessary for external operations in confined areas and operating the aircraft near its maximum gross weight for the given ambient conditions in the night environment.

b. General

(1) Review operational and safety considerations discussed in the appropriate NATOPS Flight Manual and MCRP 4-23E and Multi-Service Helicopter

Sling Load Manual. Initial qualification, re-qualification, and subsequent flights may be single or dual point, dual point preferred.

(2) Read paragraph 133.

- c. Crew Requirement. P/P/CC/AO.
- d. External Syllabus Support. HST and a single point or dual point load.
- e. Simulator Training. (1 Period, 1.5 Hours).
- f. Flight Training. (3 Flights, 4.5 Hours).

EXT-340 1.5 SC S CH-53 (NS)

Goal. Conduct heavy external lift operations.

Requirement

Introduce:

Techniques for heavy external lift operations.
Emergency procedures during external operations.

Review:

EXT-240.

Performance Standards. Compute power requirements/margin based on cockpit indications while in pickup/drop off zone. Same as EXT-240 while operating in conditions approaching maximum aircraft performance within the boundaries of existing safety considerations.

External Syllabus Support. WST/APT.

EXT-341 1.5 R,SC 1 CH-53 (NS)

Goal. Conduct heavy external lift operations.

Requirement

Discuss:

Same as EXT-240.
Techniques for heavy external lift operations.
Minimum power margin based on operating environment.

Introduce:

Techniques for heavy external lift operations.
Emergency procedures during external operations.

Review:

EXT-240.

Performance Standards. Compute power requirements/margin based on cockpit indications while in pickup/drop off zone. Same as EXT-240 while operating in conditions approaching

maximum aircraft performance within the boundaries of existing safety considerations.

Prerequisite. EXT-340, EXT-240 (for single point operations) or EXT-241 (for dual point operations).

Range Requirements. CAL/MAL site.

External Syllabus Support. HST and single or dual point load.

EXT-342 1.5 R,SC 1 CH-53 NS

Goal. Conduct LLL NS external operations, dual point preferred.

Requirement

Instructor:

NSI required for initial qualification and re-qualification.

Discuss:

Same as EXT-242 (single point) and EXT-243 (dual point).

Introduce:

LLL NS externals.

Review:

EXT-241 (single point) and EXT-242 (dual point).

Performance Standards. Execute 5 pickups and deliveries or demonstrate proficiency as defined by the ability to fly within 50' and 10 kts of briefed altitude and airspeed, and deliver load within 5 meters of intended point of delivery and +/- 10 degrees of assigned heading.

Prerequisite. CAL-320.

Range Requirements. CAL/MAL site.

External Syllabus Support. HST and single or dual point load.

EXT-343 1.5 R,SC 1 CH-53 NS

Goal. Conduct external flight in the TERF profile in the night environment.

Requirement

Instructor:

NSI required for initial qualification and re-qualification.

Discuss:

Same as EXT-240 or EXT-241.
Terrain/obstacle clearance.
Route planning considerations.
Light level planning considerations.

Introduce:

TERF externals in the night environment.

Review:

Single and/or dual point procedures.
TERF maneuvers.

Performance Standards. Same as EXT-242.

Prerequisite. If conducted under HLL conditions: TERF-232, EXT-242 (if single point), and EXT-243 (if dual point). If conducted under LLL conditions: TERF-330 and EXT-342.

Range Requirements. CAL/MAL site. TERF maneuver area/route.

External Syllabus Support. HST, single or dual point load.

4. Ground Threat Reaction (GTR)

a. Purpose. To introduce and develop proficiency in using ASE and tactics to defeat non-radar ground-based threats.

b. General. Pilots shall conduct this stage against non-radar ground-based threats. Utilization of a range with threat simulation systems (e.g., Smokey SAMs, target lights, handheld pyrotechnics, and AAR-47 stimulator) will greatly enhance aircrew training.

c. Crew Requirement. P/P/CC/AG.

d. Ground Training

(1) Pilots shall complete the MAWTS-1 academic syllabus for GTR, as specified in the MAWTS-1 Course Catalog, prior to commencing the flight phase.

(2) Review applicable chapters of ANTP 3-22.3-CH53 for non-radar IR and AAA countermeasures, ASE, and tactical formation maneuvering. Consult the AFTTP 3-1 for threat systems information.

c. Flight Training. (1 Flight, 1.0 Hours).

GTR-350 1.0 R,SC 2 CH-53 (NS)

Goal. Conduct ground threat reactions and ASE familiarization.

Requirement

Instructor:

WTI or DMI required when the PUI is not proficient. NSI required for if utilizing NS when both pilots are not NSQ for the appropriate light level.

Discuss:

Operation of the ALE-39/47, ALQ-157, and AAR-47.
The strengths and weaknesses of each ASE system versus non-radar ground-based threats.

CRM.
Different tactical IR countermeasures.
Tactical maneuvering to counter the threat.
Inter- and intra-aircraft communications and standard terminology.
Threat identification and rules of engagement.
Lookout doctrine.

Introduce:
Tactical maneuvering and ASE employment to counter the threat.
Inter- and intra-aircraft communications and standard terminology.

Review:
GTR-250.
TACFORM maneuvering.
TERF.

Performance Standards. Effectively maneuver aircraft against various non-radar ground-based threats. Utilize standard terminology in inter- and intra-aircraft communications. Demonstrate working knowledge of ASE.

Prerequisite. MAWTS-1 GTR class. TERF-231 and GTR-250. If flown under HLL conditions, TERF-233. If flown under LLL conditions, TERF-331.

Ordinance. 60 flares.

Range Requirements. Expendable capable range. Approved TERF maneuver area/route.

External Syllabus Support. Ground-based non-radar threat simulators (e.g., Smokey SAMs, AAR-47 stimulator, handheld pyrotechnics, target lights).

5. Aerial Refueling (AR) (CH-53E)

a. Purpose. To develop proficiency in AR.

b. General

(1) Discuss and become thoroughly familiar with all aspects of CRM as described in the CH-53E NATOPS Manuals and the NATOPS Air Refueling Manual (NAVAIR 00-8-T-110). Successful completion of each flight requires a minimum of 3 contacts with demonstrated proficiency and movement to the refueling position.

(2) The supervision of an ARI is required for all events where the PUI is not proficient. AR-362 requires the supervision of an NSI if both pilots are not NSQ for the appropriate light level.

c. Crew Requirement. AR-360, 361: P/P/CC. AR-362: P/P/CC/AO.

d. Ground Training. Pilots shall consult the MAWTS-1 Course Catalog for the recommended lectures in the Academic Support Package applicable to

this stage of flight, in addition to the MAWTS-1 NVD Manual and ANTPP 3-22.3-CH53.

e. Flight Training. (3 Flights, 3.0 Hours).

AR-360 1.0 SC 1 CH-53E

Goal. Conduct day AR.

Requirement

Instructor:

ARI required for initial qualification and re-qualification.

Discuss:

Same as AR-260.

Review:

AR-260.

Performance Standards. Demonstrate the ability to perform a successful join-up and movement to the observation position; movement to a stable pre-contact, refueling and disconnect position. Initial qualification shall be performed right seat, left hose.

Prerequisite. AR-260.

Range Requirements. Special use airspace.

External Syllabus Support. 1 KC-130 tanker.

AR-361 1.0 R,SC 1 CH-53E

Goal. Conduct day AR.

Requirement

Instructor:

ARI required for initial qualification and re-qualification.

Discuss:

Same as AR-260.

Types of tanker rendezvous (tanker orbit, running rendezvous, etc.).

Introduce:

Refueling from both sides of the tanker if available.
No COMM procedures.

Review:

AR-360.

Performance Standards. Same as AR-360. Demonstrate the ability to perform all 5 positions from right seat, both left and right hose (if available).

Prerequisite. AR-360.

Range Requirements. Special use airspace.

External Syllabus Support. 1 KC-130 tanker.

AR-362

1.0 R,SC 1 CH-53E NS

Goal. Conduct night AR with NS.

Requirement

Instructor:

ARI required for initial qualification and re-qualification. ARI must be an NSI if PUI is not NSQ for appropriate light level.

Discuss:

Same as AR-260.
NS/HNVS considerations.
Light Level Planning considerations.
Night movement around tanker.
Multiple receiver conduct at night.
Closure rates.
Depth perception.
Receiver/tanker lighting.
Visual illusions.
Inadvertent IMC.
EMCON visual signals.
NS emergencies.

Introduce:

NS AR.

Performance Standards. Same as AR-360. For initial qualification, demonstrate the ability to perform all 5 positions from right seat, both left and right hose (if available).

Prerequisite. AR-361.

Range Requirements. Special use airspace.

External Syllabus Support. KC-130 tanker.

6. Aerial Gunnery (AG)

a. Purpose. To introduce NS AG employment.

b. General. Discuss and become familiar with all aspects of AG as described in the MAWTS-1 Aerial Gunnery Manual, ASP Fundamentals of Aerial Gunnery, the ANTP 3-22.3-CH53, and the appropriate NATOPS flight manual.

- c. Crew Requirements. P/P/CC/AGO(AGUI, AGI)/TG (TGUI, TGI).
- d. Ground Training. Same as AG-280.
- e. Flight Training. (1 Flight, 1.0 Hour).

AG-380 1.0 R,SC 1 CH-53 NS

Goal. To introduce NS AG employment.

Requirement

Instructor:

NSI required for initial qualification and re-qualification.

Discuss:

Same as AG-280.
Night adaptation and muzzle flash awareness.
Laser operations and safety per the ANTTP 3-22.3-CH53.

Introduce:

Same as AG-280 in night environment.

Prerequisite. AG-280.

Performance Standards. Same as AG-280.

Ordnance. Minimum of 2 .50 Cal (TG optional) and .50 CAL ammo.

Range Requirements. Live fire AG range (.50 cal). Laser-capable range.

7. Tactics (TAC)

a. Purpose. To plan, brief, execute and debrief a tactical mission in a medium threat environment, using escort aircraft, if available.

b. General

(1) The PUI shall plan, brief, and debrief each flight. To the greatest extent possible, incorporate the employment of escort aircraft (fixed or rotary-wing), ALE-39/47, AAR-47, HNVS and HUD, APR-39, the .50 caliber machine gun, and use of NBC equipment as required. Pilots shall use the ANTTP 3-22.3-CH53 and RW TACSOP as source documents for planning and developing proficiency in planning, briefing, execution, and debriefing.

(2) TAC sorties will be flown with .50 cal whenever practical.

(3) Read paragraph 133.

c. Crew Requirement. P/P/CC/AO.

d. Ground Training. Consult the MAWTS-1 Course Catalog for the recommended Academic Support Package lectures applicable to this stage of training.

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

TAC-390 2.0 R,SC 2+ ACFT

Goal. Conduct assault support tactical missions in a medium threat environment.

Requirement

Discuss:

Same as TAC-290.
Flight leadership.
ITG considerations.
Embark and debark of troops and equipment.
Sectors of fire.
Escort considerations.
Fire Support Coordination considerations.
Weapons preflight, control, and employment.

Review:

TAC-290.

Performance Standards. Plan and brief a tactical mission IAW RW TACSOP and ANFTP 3-22.3-CH53. Remain oriented IAW RW TACSOP Magellan criteria while navigating to a minimum of 6 checkpoints while using 1:250,000 and 1:50,000 scale maps. To the maximum extent possible route should be a minimum of 50 nm. Demonstrate proficiency with aircraft navigation systems. Arrive in LZ within \pm 1 minute of L-Hour and within 2 rotors of prebriefed landing point.

Prerequisite. TAC-290 (AG-280 if .50 cal to be employed).

Ordnance. Two .50 cal (TG and .50 Cal rounds optional reference Chapter 2 of CH-53 T&R).

Range Requirements. Live fire AG range (.50 cal). CAL/MAL site. Approved TERF maneuver area/route.

TAC-391 2.0 R,SC 2+ ACFT NS

Goal. Conduct assault support tactical missions in a medium threat environment during LLL conditions.

Requirement

Instructor:

NSI required for initial qualification and re-qualification.

Discuss:

Same as TAC-291 and TAC-390.
LLL planning considerations.
Effects of ordnance delivery on NS.

Review:

TAC-291 and TAC-390.

Performance Standards. Plan and brief a tactical mission IAW RW TACSOP and ANTPP 3-22.3-CH53. Remain oriented IAW RW TACSOP Magellan criteria while navigating to a minimum of 6 checkpoints while using 1:250,000 and 1:50,000 scale maps. To the maximum extent possible route should be a minimum of 50 nm. Demonstrate proficiency with aircraft navigation systems. Arrive in LZ within \pm 1 minute of L-Hour and within 2 rotors of prebriefed landing point.

Prerequisite. CAL-321, TERF-331, and TAC-390 (AG-380 if .50 cal to be employed).

Ordnance. 2 .50 cal (TG and .50 Cal rounds optional reference Chapter 2 of CH-53 T&R).

Range Requirements. Live fire AG range (.50 cal). CAL/MAL site. Approved TERF maneuver area/route.

134. CORE SKILL PLUS

1. Helicopter Insertion & Extraction Techniques (HIE)

- a. Purpose. To introduce HIE methods required in executing special operations.
- b. General. The pilots shall conduct a brief with the supported unit.
- c. Crew Requirement. P/P/CC/AO.
- d. Ground Training. Aerial delivery, fast rope, rappel, SPIE rig, and helocast training lectures from MAWTS-1 Academic Support Package and ANTPP 3-22.3-CH53, as appropriate.
- e. Flight Training. (3 Flights, 3.0 Hours).

HIE-400 1.0 R, SC 1 CH-53 (NS)

Goal. Conduct tactical insertion and/or extraction of a ground force via fast rope, rappelling, or SPIE.

Requirement

Discuss:

CRM.
Safety precautions.
Signals/communications with HRST master.
Training master procedures.
Rescue Hoist procedures and types of operations.
Obstacle clearance.
Precision hover/hover performance.
Emergency procedures to include NS emergencies if flown at night.

Introduce:

Techniques for inserting personnel by fastrope, rappelling, or SPIE.
Signals/communications with HRST master.

Precision hover.

Performance Standards. Execute approach and hover within $\pm 5'$ of intended altitude and within 2 meters of intended spot.

Prerequisite. CAL-220 for day. NSQ for appropriate light level.

Range Requirements. Suitable CAL/MAL site.

External Syllabus Support. HRST Master and ground safety personnel.

HIE-401

1.0 R,SC 1 CH-53

Goal. Conduct tactical insertion of a ground force via helocast.

Requirement

Discuss:

CRM.
Safety precautions.
Training master procedures.
Signals/communications with jump master.
Obstacle clearance.
Precision taxi techniques over water.
Emergency procedures to include NS emergencies.
Vertigo and visual illusions.

Introduce:

Techniques for inserting personnel by helocast.
Signals/communications with jump master.
Precision taxi.

Performance Standards. Execute approach/hover within ± 5 ft/ ± 3 kts of intended altitude and ground speed.

Prerequisite. TERF qualified.

Range Requirements. Approved helocast drop zone.

External Syllabus Support. Jump master, safety boat and safety personnel.

HIE-402

1.0 R,SC 1 CH-53 (NS)

Goal. Conduct tactical insertion via para ops.

Requirement

Discuss:

CRM.
Safety precautions.
Signals/communications with jump master.
Training master procedures.
Obstacle clearance.

Emergency procedures to include NS emergencies.

Introduce:

Techniques for inserting personnel by para ops.
Signals/communications with jump master.

Performance Standards. Fly within $\pm 50'$ of designated altitude and ± 5 kts of designated airspeed.

Prerequisite. CAL-220 for day. NSQ for appropriate light level.

Range Requirements. Approved drop zone.

External Syllabus Support. Jump master and ground safety personnel.

2. Ground Threat Reaction (GTR)

a. Purpose. To introduce and develop proficiency in using ASE and tactics to defeat radar ground-based threats.

b. General. Pilots shall conduct this stage against an electromagnetic threat simulator. Use of the APR-39 and ALE-39/47 trainer or simulator will aid in preparing aircrew prior to flight.

c. Crew Requirement. P/P/CC/AO.

d. Ground Training

(1) Pilots shall complete the MAWTS-1 academic syllabus for GTR specified in the MAWTS-1 Course Catalog prior to commencing the flight phase.

(2) Review applicable chapters of ANTPP 3-22.1-CH53 Tactical Manual, ANTPP 3-22.3-CH-53 for EW countermeasures, ASE, and tactical formation maneuvering. Consult the AFTTP 3-1 for threat systems information.

e. Flight Training. (1 Flight, 1.0 Hour).

GTR-450 1.0 SC,R 2 CH-53 (NS)

Goal. Conduct GTR while employing ASE against various radar ground-based threats.

Requirement

Instructor:

DMI for initial qualification and re-qualification. NSI if flown at night and both pilots are not NSQ for the appropriate light level.

Discuss:

Operations of the ALE-39/47, APR-39, ALQ-157, AAR-47, and expendables.
The strengths and weaknesses of each ASE system versus ground-to-air and air-to-air threats.

CRM.
Section tactics and tactical maneuvering against ground-based threat systems.
Use of radar horizon, ground clutter, radar resolution cells, and radar masking techniques.

Introduce:

Various threat signatures concentrating on threat recognition and detection.
Surface fires evasive maneuvers coordinated with the dispensing of chaff and flares.
Section maneuvering against radar guided threats on an EW range or with an emitter.
Section threat avoidance, masking and the use of chaff and flares.

Performance Standards. Effectively maneuver aircraft against various radar ground-based threats. Utilize standard terminology in inter- and intra-aircraft communications. Demonstrate working knowledge of ASE.

Prerequisite. TERF-231 proficient, GTR-250, and MAWTS-1 GTR class.

Ordnance. 30 chaff and 30 flares.

Range Requirements: EW range or emitter with threat systems to include electromagnetic and ground based threat simulation. Emitter should include search, acquisition, and track capabilities.

External Syllabus Support. Emitter with various threat system simulation.

3. Defensive Measures (DM)

a. Purpose. To develop proficiency in evading enemy air threats incorporating ASE in a medium threat environment. Upon completion of this stage, the pilot will be able to effectively maneuver to evade, in a multi-plane flight, low altitude air-to-air threats.

b. General. Pilots shall conduct this stage against Fixed Wing (FW) and Rotary Wing (RW) threats. Aggressor aircraft shall simulate enemy aircraft capabilities to the max extent possible.

(1) Pilots should use simulators in conjunction with classroom instruction to the maximum extent possible.

(2) PUI is DM qualified upon completion of DM-451 and DM-452.

c. Crew Requirement. P/P/CC/AO.

d. Ground Training

(1) Pilots shall complete the MAWTS-1 academic syllabus for DM as specified in the MAWTS-1 Course Catalog prior to commencing the flight phase.

(2) Review applicable chapters of ANTP 3-22.3-CH53 for DM countermeasures, ASE, and tactical formation maneuvering. Consult the AFTTP 3-1 for threat systems information.

e. Flight Training. (2 Flights, 2.0 Hours).

DM-451 1.0 R,SC 2 CH-53

Goal. Conduct section DM against a rotary wing aggressor.

Requirement

Instructor:

DMI required for initial qualification and re-qualification.

Discuss:

CRM.
Lookout doctrine.
Situational awareness.
Adversary aircraft parameters.
Adversary weapons envelopes.
Mutual support.
Section tactical maneuvers.
Five axioms of survival.
Free and engaged roles and responsibilities.

Introduce:

Section tactical maneuvers in response to a threat helicopter.

Performance Standards. Effectively maneuver aircraft against various rotary wing threats. Utilize standard terminology in inter- and intra-aircraft communications. Demonstrate working knowledge of ASE.

Prerequisite. TERF-231 proficient and MAWTS-1 DM class.

Ordnance. 60 flares.

Range Requirements. Approved TERF maneuver area.

External Syllabus Support. 1 helicopter to serve as adversary aircraft, preferably an attack helicopter.

DM-452 1.0 R,SC 2 CH-53

Goal. Conduct section DM against a fixed wing aggressor.

Requirement

Instructor:

DMI required for initial qualification and re-qualification.

Discuss:

CRM.

Lookout doctrine.
Situational awareness.
Adversary aircraft parameters.
Adversary weapons envelopes.
Mutual support.
Section tactical maneuvers.
Five axioms of survival.
Free and engaged roles and responsibilities.
Introduce:
Section tactical maneuvers in response to a fixed wing aircraft.

Performance Standards. Effectively maneuver aircraft against various fixed wing threats. Utilize standard terminology in inter- and intra-aircraft communications. Demonstrate working knowledge of ASE.

Prerequisite. TERF-231 proficient and MAWTS-1 DM class.

Ordnance. 60 flares.

External Syllabus Support. 1 FW aircraft to serve as an aggressor.

3. Nuclear, Biological, and Chemical (NBC)

a. Purpose. To conduct flight operations while wearing NBC protective equipment.

b. General. For the safe execution of initial NBC flights, one pilot and one air crewman shall remain unmasked.

c. Crew Requirement. P/P/CC.

d. Ground Training

(1) Discuss wearing of the NBC defense suit, mask, hood, gloves and boots. Introduce proper maintenance and serviceability checks on equipment, emphasizing donning of equipment.

(2) Discuss physiological factors of flying with NBC protective equipment.

e. Flight Training. (1 Flight, 1.0 Hour).

NBC-460 1.0 R,SC 1 CH-53 (NS)

Goal. Conduct flight in a simulated NBC environment.

Requirement

Instructor:

NSI required for initial qualification and re-qualification if flown at night and both pilots are not NSQ for the appropriate light level.

Discuss:

CRM.
Comfort level.
Wearing of NBC equipment in the aircraft.
Distortion of vision.
Communications.
Proper use of NBC defensive equipment.
NS concerns with NBC equipment.

Introduce:

Taxi, low work, pattern work.
Confined area landings.
Communications.

Performance Standards. Adequately taxi, hover, and fly while wearing NBC gear. Communicate effectively while wearing NBC gear.

Prerequisite. CAL-220 for day. CAL-222 for HLL. CAL-320 for LLL.

Range Requirements. CAL/MAL site.

4. Carrier Qualification (CQ)

a. Purpose. To qualify pilots in day, night and NS flight operations from a helicopter capable ship.

b. General. Discuss and become familiar with all aspects of shipboard operations and CRM applicable to the carrier qualification stage as described in the appropriate NATOPS Flight Manual, NWP-42, LHA/LHD NATOPS, and OPNAVINST 3710.7. Each initial instructional flight requires a minimum of five takeoffs and landings; additional takeoffs and landings as required to demonstrate proficiency. Initial Night Systems Carrier Qualification training shall be accomplished under High Light Level conditions. Requalification and proficiency training may be accomplished under any light level condition.

c. Crew Requirement. CQ-470: P/P/CC. AO required for CQ-471, CQ-472.

d. Prerequisites. Pilots should complete the appropriate FCLP flight prior to flying the similar CQ flight. CQ-472 requires a designated NSI for initial qualification and re-qualification.

e. Ground Training. Review shipboard operations and CQ procedures as contained in the appropriate NATOPS Flight Manual, NWP-42, LHA/LPH/LHD NATOPS and OPNAVINST 3710.7 prior to commencing this stage.

f. Flight Training. (3 Flights, 4.5 Hours).

CQ-470 1.5 R,SC 1 CH-53

Goal. Introduce day CQs.

Requirement

Discuss:

CRM.
Comfort level.
Feet wet/landing checklist.
Closure rate.
Wind envelopes.
Aircraft lighting procedures.
Deck markings.
LSE signals.
Voice procedures/Lost communication procedures.
Shipboard landing patterns.
Shipboard holding patterns.
Shipboard instrument patterns.
Shipboard emergencies.
Air space control in the shipboard environment.

Introduce:
Day CQ.

Performance Standards. Same as FCLP-271.

Prerequisite. FCLP-271.

External Syllabus Support. Helicopter capable ship.

CQ-471

1.5 1 SC CH-53 N*

Goal. Conduct night, unaided CQs.

Requirement

Discuss:
FCLP-271 discussion items.
Spatial disorientation.
Aircraft/deck lighting.

Introduce:
Unaided night CQs.

Review:
FCLP-272.
FCLP-272.

Prerequisite. FCLP-272 and CQ-470.

External Syllabus Support. Helicopter capable ship.

CQ-472

1.5 R,SC 1 CH-53 NS

Goal. Conduct NS CQs.

Requirement

Instructor:
NSI required for initial qualification and re-qualification.

Discuss:

FCLP-273 discussion items.
Scan techniques.
NS aircraft/deck lighting.
NS landing techniques.
NS emergencies.

Introduce:
NS CQs.

Performance Standards. Same as FCLP-273.

Prerequisite. FCLP-273 and CQ-470.

External Syllabus Support. NS compatible helicopter capable ship.

6. Tactics (TAC)

a. Purpose. To conduct practical application exercises using skills developed throughout the syllabus. Pilots shall emphasize the integration of Marine aviation assets, threat and threat counter-tactics, and the C3 system. These exercises will include mission planning, briefing, and execution of an assault support mission in a simulated medium threat environment. The total number of aircraft, as specified, may be a dissimilar mix of aviation assets.

b. General. Pilots should use the ANTP 3-22.3-CH53 and the RW TACSOP as a source document for planning. Pilots may conduct these flights in high or low light level conditions, if the participating pilots have the requisite NSQ designation.

c. Crew Requirement. P/P/CC/AO.

d. Ground Training. Consult the MAWTS-1 Course Catalog for the recommended lectures in the Academic Support Package applicable to this stage of flight.

e. Flight Training. (4 Flights, 10.0 Hours).

TAC-490 2.0 R,SC 3+ ACFT

Goal. Conduct integrated tactical flight leadership in a low-to-medium threat environment.

Requirement

Discuss:

Same as TAC-390.
Division tactics.
Objective area analysis.
Threat analysis and counter-tactics.
The use of escort assets emphasizing responsibilities of the air mission commander, assault flight leader, and escort flight leader.

Introduce:

Division tactics.
Use escort assets emphasizing responsibilities of the air

mission commander, assault flight leader, and escort flight leader.

Performance Standards. Plan and brief a tactical mission IAW RW TACSOP and ANTP 3-22.3-CH53. Remain oriented IAW RW TACSOP Magellan criteria while navigating to a minimum of 6 checkpoints while using 1:250,000 and 1:50,000 scale maps. To the maximum extent possible route should be a minimum of 50 nm. Demonstrate proficiency with aircraft navigation systems. Arrive in LZ within \pm 1 minute of L-Hour and within 2 rotors of prebriefed landing point.

Prerequisite. TAC-390.

Ordnance. Two .50 cal (TG and .50 Cal rounds optional reference Chapter 2 of CH-53 T&R).

Range Requirements. Live fire AG range (.50 cal). CAL/MAL site. Approved TERF maneuver area/route.

External Syllabus Support. Assault support escort aircraft if available.

TAC-491

2.0 R, SC 3+ ACFT NS

Goal. Conduct integrated tactical flight leadership in an integrated low-to-medium threat environment; use MCCRES standards as a reference for mission planning.

Requirement

Instructor:

NSI required for initial qualification and re-qualification.

Discuss:

Same as TAC-490 and TAC-291.

Introduce:

TAC-490 while utilizing NS.

Performance Standards. Plan and brief a tactical mission IAW RW TACSOP and ANTP 3-22.3-CH53. Remain oriented IAW RW TACSOP Magellan criteria while navigating to a minimum of 6 checkpoints while using 1:250,000 and 1:50,000 scale maps. To the maximum extent possible route should be a minimum of 50 nm. Demonstrate proficiency with aircraft navigation systems. Arrive in LZ within \pm 1 minute of L-Hour and within 2 rotors of prebriefed landing point.

Prerequisite. TAC-390, TAC-291 if flown under HLL conditions, TAC-391 if flown under LLL conditions.

Ordnance. Two .50 cal (TG and .50 Cal rounds optional reference Chapter 2 of CH-53 T&R).

Range Requirements. Live fire AG range (.50 cal). CAL/MAL

site. Approved TERF maneuver area/route.

External Syllabus Support. Assault support escort aircraft if available.

TAC-492

2.0 R,SC 2 ACFT NS

Goal. Develop tactical flight proficiency in urban terrain operations at night per the MAWTS-1 MOUT Manual.

Requirement

Instructor:

NSI required for initial qualification and re-qualification.

Discuss:

Effects of ambient lighting on NS in an urban area.
Urban navigation.
Targeting and fire support coordination in an urban area.

Introduce:

Effects of ambient lighting on NS in an urban area.
Urban navigation.
Targeting and fire support coordination in an urban area.

Performance Standards. Plan and brief a tactical mission IAW RW TACSOP and ANTP 3-22.3-CH53. Remain oriented IAW RW TACSOP Magellan criteria while navigating using appropriate scale maps. Demonstrate proficiency with aircraft navigation systems.

Prerequisite. TAC-390, TAC-291 if flown under HLL conditions, TAC-391 if flown under LLL conditions.

Range Requirements. CAL/MAL site in urban environment.

External Syllabus Support. Assault support escort aircraft if available.

TAC-493

4.0 R,SC 2 ACFT (NS)

Goal. Conduct a long range mission in a low-to-medium threat environment utilizing AR, TFBDS, and/or FARP/RGR.

Requirement

Instructor:

NSI required for initial qualification and re-qualification if flown at night.

Discuss:

Same as TAC-390 or TAC-391 if flown at night.
Refueling considerations.
Detailed fuel planning.
Escort/fire support coordination.

Enclosure (1)

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Utilization of TBFDS, FARP/RGR considerations.
Multiple tanker/receiver operations.

Introduce:

Detailed fuel planning.
Utilization of TBFDS, FARP/RGR considerations.
Multiple tanker/receiver operations if available.

Performance Standards. Plan and brief a tactical mission IAW RW TACSOP and ANTPP 3-22.3-CH53. Remain oriented IAW RW TACSOP Magellan criteria while navigating while using 1:250,000 and 1:50,000 scale maps. Utilize fuel from external source (TBFDS may be used). Demonstrate proficiency with aircraft navigation systems. Arrive in LZ within \pm 1 minute of L-Hour and within 2 rotors of prebriefed landing point.

Prerequisite. TAC-390. TAC-291 if flown under HLL conditions. TAC-391 if flown under LLL conditions. If plan is to AR, AR-361 (day), AR-362 (NS).

Ordnance. Two .50 cal (TG and .50 Cal rounds optional reference Chapter 2 of CH-53 T&R).

Range Requirements. Live fire AG range (.50 cal). CAL/MAL site. Approved TERF maneuver area/route. Special use airspace for AR.

External Syllabus Support. Assault support escort aircraft if available. KC-130 Tanker. AGS as required.

140. IUT FLIGHT/SIMULATOR PERFORMANCE REQUIREMENTS. The 500 and 600 level flights do not affect CRP points.

1. CH-53D Core Skill Introduction Instructor (CSII) Training

a. Purpose. To develop qualified instructor pilots for day events using a standardized flight training program.

b. General

(1) Fly IUT flights with a designated CSII.

(2) Pilots undergoing instructor training should fly in the right seat.

(3) All IUTs shall complete every event of the IUT training syllabus.

(4) Individuals shall be TERFI and section leader designated prior to CSII designation.

(5) The MAG-24 standardization evaluator shall certify all CSIIIs prior to designation. The MAG-24 standardization evaluator shall conduct an annual standardization check for all MAG CSIIIs.

c. Training Objectives. All IUT flights emphasize instructional techniques, briefing, and debriefing. The IUT will be capable of

demonstrating all training objectives listed for the referenced syllabus flight. Emphasis on all flights is on training objectives, method of instruction, and student problem areas. At the completion of this stage of training, the Pilot will be designated a CSII and is qualified to instruct CH-53D Core Skill Introduction CH-53E to D Series Conversion and Refresher events.

- d. Crew Requirement. CSII/IUT/CC (AO required on EXT events).
- e. Flight Training. (3 Flights, 5.5 Hours).

IUT-550 2.0 1 CH-53D

Goal. Introduce the IP brief and demonstrate standardized procedures for flight planning, preflight, and all day FAM stage maneuvers. Review basic instrument maneuvers, IFR planning, filing, and airway procedures.

Requirement

Discuss:

CRM.
Preflight and postflight pilot briefings.
Cockpit procedures.
Techniques of instruction.
Common mistakes.
Local course rules.
CRM.
IFR planning.
Filing a DD-175.
Airway procedures.
Precision/non-precision approaches.

Review:

All FAM procedures and maneuvers.
Emergency Procedures.
Instrument checklist.
Attitude instrument flight.
Standard rate climbing and descending turns.
Recovery from unusual attitudes.
Vertical S-1 pattern.
Oscar pattern.

Performance Standards. Per CH-53D NATOPS and MAG-24 Standardization Manual. Instructors shall emphasize the ability to teach using all appropriate references and SOPs, evaluate problems, and apply corrective instruction. Fly a minimum of one precision and one non-precision approach.

Prerequisites. Preflight walk-around, egress and local course rules exam.

IUT-551 2.0 1 CH-53D

Goal. Review CAL and external instruction techniques.

Requirement

Discuss:

CRM.
Comfort level.
Single point external operations.
Load computations, preflight and in-flight.
Emergency procedures.
Aircraft limitations.

Review:

All CAL stage maneuvers.
Single point external operations.

Performance Standards. Per CH-53D NATOPS and FRS Standardization Manual. Execute five pickups and deliveries or demonstrate proficiency as defined by the ability to fly within 50' and 10 kts of briefed altitude and airspeed, and deliver load within 5 meters of intended point of delivery and +/- 10 degrees of assigned heading.

Range Requirements. Approved CAL/MAL site.

Prerequisites. IUT-550.

External Syllabus Support. HST, single point loads.

STANX-552

1.5 E 1 CH-53D

Goal. Flight instructor standardization check.

Requirement

Discuss:

CRM.
CH-53D limitations.
Course Rules.
MAG-24 Standardization Manual.
Instruction techniques.

Performance Standards. Per CH-53D NATOPS and MAG-24 Standardization Manual. The MAG-24 standardization evaluator shall evaluate this event.

Prerequisites. Open and closed book NATOPS exam. IUT-551.

Range Requirements. Approved CAL/MAL site.

2. FRS Day and Night Unaided Instructor Training

a. Purpose. To develop qualified instructor pilots for day and night unaided events using a standardized flight training program.

b. General

(1) Fly IUT flights with a designated FRS Instructor Pilot.

(2) Pilots undergoing instructor training should fly in the right seat.

(3) All IUTs should complete every event of the IUT training syllabus.

c. Training Objectives. All IUT flights emphasize instructional techniques, briefing, and debriefing. The IUT will be capable of demonstrating all training objectives listed for the referenced syllabus flight. Emphasis on all flights is on training objectives, method of instruction, and student problem areas. At the completion of this stage of training, the Pilot will be designated an Instructor Pilot (IP) and is qualified to instruct all day and night unaided Core Skill Introduction events.

d. Crew Requirement. IP/IUT/CC/AO.

e. Flight Training. (7 Flights, 11.0 Hours).

FAM-553 1.5 1 CH-53E

Goal. Introduce the IP brief and demonstrate standardized procedures for flight planning, preflight, and all day FAM stage maneuvers.

Requirement

Discuss:

CRM.
Preflight and postflight pilot briefings.
Cockpit procedures.
Techniques of instruction.
Local course rules.

Performance Standards. Per CH-53E NATOPS and FRS Standardization Manual. Instructors shall emphasize the ability to teach using all appropriate references and SOPs, evaluate problems, and apply corrective instruction.

Prerequisites. Preflight walk-around, egress and local course rules exam.

FAM-554 1.5 1 CH-53E N*

Goal. Review all familiarization stage maneuvers at night.

Requirement

Discuss:

CRM.
The night unaided environment.

Performance Standards. Per CH-53E NATOPS and FRS Standardization Manual. IUT will perform all night familiarization stage maneuvers with emphasis on the IUT's instructional technique. Instructors shall emphasize the ability to teach, evaluate problems, and apply corrective

instruction of FAM maneuvers in the unaided night environment.

INST-555

2.0 A/S 1 CH-53E (N)

Goal. Review basic instrument maneuvers, IFR planning, filing, and airway procedures.

Requirement

Discuss:

- CRM.
- IFR planning.
- Filing a DD-175.
- Airway procedures.
- Precision/non-precision approaches.

Review:

- Instrument checklist.
- Attitude instrument flight.
- Standard rate climbing and descending turns.
- Recovery from unusual attitudes.
- Vertical S-1 pattern.
- Oscar pattern.
- Precision and non-precision approaches.

Performance Standards. Per CH-53E NATOPS and FRS Standardization Manual.

CAL-556

1.5 1 CH-53E

Goal. Review CAL instruction techniques.

Requirement

Discuss:

- CRM.
- Comfort level.

Review:

- All CAL stage maneuvers.

Performance Standards. Per CH-53E NATOPS and FRS Standardization Manual.

Range Requirements. CAL/MAL site.

FORM-557

1.5 2 CH-53E

Goal. Review formation instructional techniques and formation stage maneuvers emphasizing closure rates and radius of turn.

Requirement

Discuss:

- Loss of visual contact.
- Parade position.
- Cruise turn principles.

Section CALs principles.

Performance Standards. Per CH-53E NATOPS and FRS Standardization Manual.

EXT-558 1.5 1 CH-53E

Goal. Review external operation instructional techniques.

Requirement

Discuss:

CRM.
Single and dual point operations.
Load computations, preflight and in-flight.
Emergency procedures.
Aircraft limitations.

Review:

Single and dual point operations.

Performance Standards. Per CH-53E NATOPS and FRS Standardization Manual. Execute five pickups and deliveries or demonstrate proficiency as defined by the ability to fly within 50' and 10 kts of briefed altitude and airspeed, and deliver load within 5 meters of intended point of delivery and +/- 10 degrees of assigned heading.

Range Requirements. Approved CAL/MAL site.

External Syllabus Support. HST, single point loads.

STANX-559 1.5 E 1 CH-53E (N)

Goal. Flight instructor standardization check.

Requirement

Discuss:

CRM.
CH-53E limitations.
Course Rules.
FRS Standardization Manual.
Instruction techniques.

Performance Standards. Per CH-53E NATOPS and FRS Standardization Manual.

141. INSTRUCTOR EVENTS

1. There are 6 graduate level courses that qualify instructors for specific portions of the T&R syllabus. These courses are as follows:

- a. Weapons and Tactics Instructor (WTI).
- b. NS Instructor (NSI).

Enclosure (1)

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- c. NS Familiarization Instructor (NSFI).
- d. Aerial Refueling Instructor (ARI).
- e. Terrain Flight Instructor (TERFI).
- f. Defensive Measures Instructor (DMI).

2. The MAWTS-1 Course Catalog contains the POIs for the above courses and the appropriate training codes. The community considers each particular stage of the T&R syllabus sufficient to maintain proficiency as an instructor.

3. NS Familiarization Instructor Training

a. Purpose. To develop qualified instructor pilots for Night Vision Goggle events using a standardized flight training program.

b. General

- (1) Fly IUT flights with a designated NSI or MAWTS-1 Instructor.
- (2) Pilots undergoing instructor training should fly in the right seat.
- (3) All IUTs shall complete every event of the IUT training syllabus.

c. Training Objectives

(1) All IUT flights emphasize instructional techniques, briefing, and debriefing. The IUT will be capable of demonstrating all training objectives listed for the referenced syllabus flight. Emphasis on all flights is on training objectives, method of instruction, and student problem areas. At the completion of this stage of training, the pilot will be designated a NSFI and is qualified to instruct all Night Vision Goggle Combat Capable HLL events.

(2) The MAWTS-1 Course Catalog contains the prerequisites and course training requirements for this stage of training.

d. Crew Requirement. IP/IUT/CC/AO.

e. Flight Training. (4 Flights, 4.0 Hours).

- (1) NS-560. Refer to MAWTS-1 Course Catalog.
- (2) NS-561. Refer to MAWTS-1 Course Catalog.
- (3) NS-562. Refer to MAWTS-1 Course Catalog.
- (4) NS-563. Refer to MAWTS-1 Course Catalog.

4. Aerial Refueling Instructor (ARI)

a. Purpose. To develop qualified instructor pilots for AR events using a standardized flight training program.

b. General

(1) Complete flights in numerical order.

(2) IUT shall demonstrate instruction and proficiency in the observation, pre-contact, refuel and disconnect positions on both sides of the tanker, from the left seat.

(3) ARIs do not require NSI designation.

(4) An ARI is required to certify additional squadron ARIs.

(5) The completion of AR-520 and AR-521 satisfies the requirements for designation as an ARI at the discretion of the CO.

c. Recertification

(1) Previously certified CH-53E ARIs returning to the CH-53E requiring Refresher or Modified Refresher training as defined in T&R Program Manual must be recertified by an ARI. Upon recertification, the designation may be made at the discretion of the squadron commanding officer. The following comprises the recertification course:

(2) The IUT must meet all prerequisites listed previously.

(3) The IUT must complete the AR-521E flight evaluated by an ARI.

d. Ground Training. The AR IUT shall present to an ARI an AR class.

e. Flight Training. (2 Flights, 2.0 Hours).

AR-520

1.0

1 CH-53E

Goal. Demonstrate AR proficiency and instructional technique in the day environment.

Requirement

Discuss:

Instructional techniques.
CRM.
Comfort level.
Decision points.
EMCON refueling procedures.
Long range fuel management considerations.

Review:

AR procedures.
AR communications.
Emergency procedures.
Flight briefing.
NATOPS AR envelope chart.

Performance Standards. Demonstrate ability to maintain a stable pre-contact position (3-5 feet behind the basket). All misses controlled and smooth. Recognize and correct unsafe closure rates/control inputs. Smooth, controlled movement from contact to refuel position. Demonstrate plugging in a turn. Demonstrate a controlled miss. IUT should plug on both sides of tanker.

Prerequisite. AR-362 and TAC-493.

Range Requirements. Special use airspace.

External Syllabus Support. KC-130 (or USAF C-130).

AR-521

1.0 E CH-53E NS

Goal. Demonstrate NS AR proficiency and instructional technique.

Requirement

Discuss:

- Instructional techniques.
- CRM.
- Comfort level.
- Decision points.
- NS EMCON refueling procedures and signals.
- Depth perception.
- NS considerations.
- Visual illusions/Vertigo.
- Lighting configurations (Marine Corps/Joint).

Review:

- AR procedures.
- AR communications.
- Emergency procedures.
- Flight briefing.
- NATOPS AR envelope chart.

Performance Standards. Demonstrate ability to maintain a stable pre-contact position (3-5 feet behind the basket). All misses controlled and smooth. Recognize and correct unsafe closure rates/control inputs. Smooth, controlled movement from contact to refuel position. Demonstrate a controlled miss. IUT should plug on both sides of tanker.

Prerequisite. AR-520* (* Unless previously certified CH-53E ARI).

Range Requirements. Special use airspace.

External Syllabus Support. KC-130 (or USAF C-130).

5. Terrain Flight Instructor (TERFI)

a. Purpose. To develop qualified instructor pilots for day terrain flight events using a standardized flight-training syllabus.

b. General

(1) All IUT flights shall be flown with a designated TERFI.
(2) All IUTs shall be TERF qualified and current per T&R Program Manual.

(3) All IUTs shall be section leader designated.

(4) The squadron will ensure that the IUT is prepared for certification. The certification stage of the flight syllabus must be complete within 6 months following the first IUT flight. If 6 months have elapsed since completion of any IUT flight, that flight must be reflown prior to completing the final certification flight.

c. Recertification

(1) Previously certified CH-53 TERFIs returning to the CH-53 requiring Refresher or Modified Refresher training as defined in the T&R Program Manual must be recertified by a TERFI. Upon recertification, the designation may be made at the discretion of the squadron commanding officer. The following comprises the re-certification course:

(a) The IUT must meet all prerequisites listed previously.

(b) The IUT must successfully complete the TERFI exam administered by a TERFI.

(c) The IUT must complete the TERF-572E flight evaluated by a TERFI.

(2) Pilots certified as a TERFI in an aircraft other than the CH-53 who transition to the CH-53 as defined in T&R Program Manual must complete the entire CH-53 TERFI Certification Course previously listed.

(3) Pilots certified as a TERFI converting within the CH-53 series who do not require Refresher training as defined in the T&R Program Manual maintain their TERFI certification and may be designated a TERFI at the discretion of the squadron commanding officer.

d. Crew Requirement. IP/IUT/CC/AO.

e. IUT Ground Training

(1) The IUT will review and be capable of presenting the following classes from the MAWTS-1 Academic Support Package (ASP):

(a) Terrain Flight Introduction (U).

(b) Tactical CRM (U).

(c) IR SAM Threat to Assault Support (U).

(d) RADAR SAM Threat to Assault Support (U).

(e) AAA Threat to Assault Support (U).

(2) The academic syllabus shall be completed within 60 days prior to beginning the certification stage of the flight syllabus.

(3) The IUT will successfully complete a TERFI exam, administered by a TERFI, prior to beginning the certification stage of the flight syllabus. The minimum-passing grade for the exam is 80 percent.

(4) The IUT will present to a TERFI one of the classes listed above, as determined by the TERFI, before completing the certification stage of the flight syllabus.

f. Flight Training. (3 Flights, 4.0 Hours).

TERF-570 1.0 1 CH-53

Goal. Demonstrate the ability to conduct flight navigation in the contour and low level profiles with emphasis on instructional techniques.

Requirement

Discuss:

- CRM in a TERF environment.
- Comfort Level.
- Instructional techniques.
- Low altitude emergencies.
- Weapons and ALE/APR employment.
- Visual illusions associated with TERF flight.

Review:

- Operational power checks.
- TERF turns, rolls, contour/low level quick stops, bunts.
- Contour profiles.
- Low altitude emergencies.
- TERF navigation techniques and responsibilities.

Performance Standards. Remain oriented IAW RW TACSOP Magellan criteria while navigating to a minimum of six checkpoints while using 1:250,000 and 1:50,000 scale maps at or below 200' AGL. To the maximum extent possible route should be a minimum of 50 nm. Demonstrate proficiency with aircraft navigation systems.

Prerequisites. TERF-230 proficient.

Range Requirements. Approved TERF maneuver area/route. CAL/MAL site.

TERF-571 1.0 1 CH-53

Goal. Demonstrate the ability to conduct all terrain flight maneuvers while flying with an external load, emphasizing instructional techniques.

Requirement

Discuss:

Instructional techniques.
Crew coordination in contour flight with externals.

Voice and visual signals.
Flight envelopes of various loads.
Cargo jettison procedures.
Low altitude emergencies.
Single/dual engine operations (with & without the load).
Illusions of terrain flight.
HST requirements.

Review:

All TERF maneuvers with external loads emphasizing requirements for early initiation of maneuvers and flight profile corrections to prevent pilot induced/assisted oscillations.
Operational power checks.

Performance Standards. The IUT will conduct a minimum of 2 hookups and deliveries placing the load within 5 meters of the intended point.

Prerequisite. EXT-242 proficient.

Range Requirements. Approved TERF maneuver area/route.
CAL/MAL site.

External Syllabus Support. HST.

TERF-572

1.0 E 2 CH-53

Goal. Evaluate the IUT's ability to perform and instruct all phases of terrain flight and terrain flight navigation.

Requirement

Discuss:

Crew coordination.
Instructional techniques.
Comfort level.
Illusions of terrain flight.
Low altitude emergencies.
Single/dual engine operations.
TERF/navigation techniques and responsibilities.
Weapons and ASE employment.

Review:

Operational power Checks.
All TERF maneuvers.

Performance Standards. Accomplish all TERF maneuvers without experiencing negative g's. Maintain altitude within 25 feet on quick stop. Remain oriented IAW RW TACSOP Magellan criteria while navigating to a minimum of 6 checkpoints while using 1:250,000 and 1:50,000 scale maps at or below 200' AGL. To the maximum extent possible route should be a minimum of 50 nm. Demonstrate proficiency with aircraft navigation systems.

Conduct at least 1 full COMM and 1 no COMM lead change. The IUT will instruct tactical formation in the low level and contour profiles.
Prerequisites. Section Leader, TERF-570*, and TERF-571* (* unless previously certified CH-53 TERFI).

DMI-580-582 See MAWTS-1 Course Catalog.

NSI-590-595 See MAWTS-1 Course Catalog.

142. EVALUATOR EVENTS

1. Flight Leadership Standardization Evaluator

a. Purpose. To certify qualified evaluators for designation as Flight Leadership Standardization Evaluators (FLSE) in accordance with the T&R Program Manual.

b. General

(1) 2d MAW is the FLSE model manager for standardization across the CH-53 community. Wing designated FLSE Program Coordinators will coordinate with the FLSE Model Manager for CH-53 standardization across the wing.

(2) MAG COs will designate all MAG FLSEs. The MAG Commanding Officer will designate a senior FLSE to ensure standardization within the MAG and to coordinate with the Wing FLSE Program Coordinator. The senior MAG FLSE should be assigned in the MAG standardization office to the maximum extent possible. In Wings where all CH-53 assets exist in one MAG, the MAG senior FLSE can also be the Wing FLSE Program Coordinator.

(3) FLSEs will evaluate at least one in-aircraft event in each flight leadership POI. The FLSE will be from a unit external to that of the prospective flight leader. FLSE certification of prospective flight leaders for deployed units or locations where a FLSE from a different unit is not available to conduct the certification may be conducted by an internal FLSE with MAG/MAGTF Commander approval. There is no requirement to reevaluate the event with an external FLSE upon return from deployment.

(4) Following the evaluation event, the FLSE will debrief the squadron CO on the event. Debriefs will address both the performance of the proposed flight leader and the degree to which the squadron has complied with the POI outlined in this manual for the applicable flight leadership stage. Final authority to designate flight leadership qualifications remains with the squadron Commanding Officer.

(5) All FLSEs will be nominated by their squadron Commanding Officer or the MAG Commanding Officer for pilots on the MAG Staff. Nominees will meet the following prerequisites: AMC, AFL, or WTI.

Designation of FLSE	Highest Flight Leadership designation they can evaluate
AMC	AMC
AFL	AFL
WTI	HAC, Section Leader, Division Leader

(6) FLSEs shall complete annual standardization training per CH-53 Flight Leadership Program Model Manager requirements.

c. Crew Requirements. FLSEs shall be designated Flight Leads.

d. Ground/Academic Training. The following Matrix will be used to track academic and administrative training. All requirements listed on the table need to be complete prior to designation by the MAG Commanding Officer.

Review Self Paced Readings	Date Complete
- MAWTS-1/TTECG How to Plan a Helicopterborne Assault	
- MAWTS-1 ACE Battle Staff Planning Guide	
- ANTPP 3-22.3-53	
- ANTPP 3-22.5-RWTACSOP	
- ANTPP 3-22.5-CH53 TPG	
Review Lectures	
- Joint Force Structure and Combined Air Operations	
- 6 functions integration	
- Helicopter Assault Key Players	
- Air Mission Commander	
- AFL Briefing CH-53 ASP	
- Objective Area Planning	
Meetings	
- Prospective FLSE shall meet with MAG senior FLSE for in-brief on requirements, evaluation criteria, debriefing responsibilities and requirement to attend periodic MAG flight leadership standardization meetings	
- Interview with MAG Commanding Officer	

e. Flight Training. No check flight for the prospective FLSE is required for certification. Upon completion of the academic training, prospective FLSEs should observe a designated FLSE conducting an evaluation flight prior to designation by the MAG Commanding Officer.

150. REQUIREMENTS, QUALIFICATIONS AND DESIGNATIONS. This phase contains required evaluation and flight leadership events.

1. Evaluation (EVAL) Flights

a. Purpose. To determine qualification for designation in specific flight skills, systems knowledge and procedures.

b. General. Squadrons should use this phase of training for check flights.

c. Crew Requirements. P/P/CC/AO (as required).

d. Ground/Academic Training. Reference OPNAVINST 3710.7R, CH-53 NATOPS and Instrument Flight Manuals.

e. Flight Training. (3 Flights, 5.0 Hours).

EVAL-600 1.5 R,SC E A/S 1 CH-53 (N)

Goal. Conduct Annual NATOPS evaluation.

Requirement. As directed in the CH-53 NATOPS Flight Manual and OPNAVINST 3710.7.

Performance Standards. The proficiency expected by the evaluator in this flight shall be commensurate with the experience level of the pilot under evaluation.

Prerequisite. The open and closed book NATOPS examinations shall be completed prior to the commencement of the check flight.

Range Requirements. CAL/MAL site.

External Syllabus Support. WST/APT as required.

EVAL-601 1.5 E A/S 1 CH-53 (N)

Goal. Conduct annual instrument evaluation.

Requirement. As directed in the CH-53 NATOPS Flight Manual and OPNAVINST 3710.7.

Performance Standards. Demonstrate proficiency in all phases of instrument flight and flight planning IAW the NATOPS Instrument Flight Manual.

Prerequisite. Completion of Instrument Ground School and all instrument requirements per OPNAVINST 3710.7 prior to the commencement of the check flight.

External Syllabus Support. WST/APT as required.

EVAL-602 2.0 R E 1 CH-53

Goal. Conduct a functional check pilot evaluation.

Requirement. Squadrons shall evaluate pilots for designation at the discretion of the commanding officer per the criteria in the CH-53 NATOPS Flight Manual, OPNAVINST 3710.7, 4790 Naval Aviation Maintenance Program and local SOPs. Squadrons shall base this evaluation after completion of a locally prepared syllabus.

Performance Standards. Demonstrated proficiency in all aspects of conducting Functional Check Flights (FCF) on the CH-53.

Prerequisite. As determined by squadron CO, MO, QAO, and STAN Board.

2. Helicopter Aircraft Commander (HAC)

a. Purpose. To demonstrate requisite knowledge, leadership, airmanship, and judgment in all phases of flight commensurate with the experience level of the pilot under evaluation.