



DEPARTMENT OF THE NAVY

NAVAL AIR STATION OCEANA  
1750 TOMCAT BOULEVARD  
VIRGINIA BEACH, VIRGINIA 23460-2168

IN REPLY REFER TO:

NASOCEANAINST 3710.18B

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AUG 21 2003

NAS OCEANA INSTRUCTION 3710.18B

Subj: QUALIFICATION AND DESIGNATION OF NON-PILOT PERSONNEL TO  
TURN-UP UH-3H ENGINES AND OPERATE BLADE FOLD/SPREAD  
SYSTEM

Ref: (a) OPNAVINST 4790.2H  
(b) NAVAIR 01-23HLH-1

Encl: (1) UH-3H Non-pilot Engine Turn-Up Recommendation  
Authorization  
(2) Non-pilot Engine Turn-Up Training Syllabus  
(3) NPTQ Currency Tracking Sheet

1. Purpose. To establish standardized procedures for qualification and designation of UH-3H engine turn-up operations per references (a) and (b).

2. Cancellation. NASOCEANAINST 3710.18A. Because of numerous changes, paragraph markings have been omitted.

3. Discussion. In order to accomplish aircraft maintenance, periodic inspections and engine gaspath/rinse and blade fold/spread operation, it is necessary to qualify and designate enlisted personnel for the operation of H-3 engines and related systems. All personnel designated must meet the qualifications outlined in paragraph 4 of this instruction.

4. Responsibilities

a. Per reference (a), the Commanding Officer will designate personnel authorized to turn UH-3H engines utilizing enclosure (1).

b. The Aircraft Organizational Maintenance Officer (AOMO) will

(1) Select highly motivated and responsible personnel within the Air Operations Maintenance Division (AOMD) for turn-up qualification.

(2) Recommend personnel for training to the Naval Air Training and Operating Procedures Standardization (NATOPS) Officer.

c. The Maintenance Material Control Officer will

(1) Ensure a current list of qualified non-pilot turn-up personnel and expiration dates are published in the Monthly Maintenance Plan.

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(2) Establish and maintain a turn qualification logbook in Maintenance Control for the purpose of tracking currency and proficiency of personnel.

d. Branch Officers and Chiefs will assist the AOMO in the screening and selection of individuals to be considered for non-pilot turn-up training.

e. The NATOPS Officer will

(1) Manage the Non-pilot Turn-up Qualified (NPTQ) Program, ensuring all assigned personnel meet the requirements in this instruction and reference (a).

(2) Review and audit designated non-pilot turn-up personnel for quarterly performance and suitability to retain qualification.

(3) Interview recommended personnel prior to enrollment in the NPTQ Program to ensure they fully understand their responsibilities with regard to NATOPS and this instruction.

(4) Ensure only the following personnel sign the specified instructor portions of enclosure (2).

(a) NPTQ members

(b) Helicopter Aircraft Commanders

(c) Helicopter Second Pilots

(d) NATOPS or Assistant NATOPS Instructors  
(check-turn)

(5) Administer formal training and tests as set forth in enclosure (2).

(6) Ensure all training and tests are completed by the trainee prior to the check turn.

(7) Ensure enclosure (1) is routed for signature, copies are sent to the Quality Assurance Officer and individual's work center supervisor and original returned to NATOPS.

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5. Action

a. Designation

(1) All AOMD personnel and H-3 aircrew, E-4 or above, are highly encouraged to participate in the program.

(2) Any AOMD maintenance personnel, E-1 or above, may participate in the program at the discretion of the AOMO by means of a special request chit routed via the NATOPS Officer.

b. Qualification

(1) Candidates must successfully complete all requirements of enclosure (1) in the following order:

- (a) Complete required reading
- (b) Complete open-book test
- (c) Complete closed-book test
- (d) Complete oral test
- (e) Complete operational training/check-turn

(2) The open and closed-book tests must be passed with a minimum score of 3.5 prior to operational training.

(3) Qualification is valid for one year, expiring the last day of the month in which the individual was designated.

(4) A minimum of two turns each month will be required to maintain qualification currency. A turn supervised by a pilot qualified in model is required if minimums are not met.

c. Annual Regualification and Personnel Qualified in a Former Command will

(1) Complete general required reading, enclosure (2), Section 1.

(2) Pass the open and closed-book test with a minimum score of 90 percent.

(3) Successfully complete operational check-turn administered by the NATOPS Instructor/Assistant NATOPS Instructor.

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6. Operation Guidelines

- a. A thorough review of the Aircraft Discrepancy Book will be accomplished prior to any aircraft turn.
- b. A complete preflight will be done prior to starting an engine. Engine and pilot protective covers will be removed.
- c. The NATOPS checklist will be used during all operations requiring engine turn-ups.
- d. Each non-pilot turn-up will be specifically authorized by Maintenance Control and logged in the NPTQ Log Book.
- e. A Plane Captain and Fireguard will be provided for every turn-up. They will be briefed by the non-pilot turn-up operator on the purpose and extent of the turn.
- f. The accessory drive, pitot heat and windshield anti-ice circuit breakers will be pulled prior to engine starts.
- g. Non-pilot turn-up personnel will not attempt a battery start of an engine.
- h. Non-pilot turn-up personnel will not perform turn-up of an aircraft in functional check flight (FCF) status. However, if the FCF status is unrelated to the turn-up of the aircraft, the Maintenance Officer, or FCF qualified pilot in their absence, may authorize non-pilot turn qualified personnel to perform engine turn-up.
- i. Turn qualified personnel and the work center Training Petty Officer will ensure all non-pilot turn-ups performed are logged in enclosure (3) and maintained in the individual's training jacket.

7. General Safety Precautions

- a. All procedures, except as modified here, will be in strict accordance with NATOPS. At first indication of a malfunction, the engine will be secured with no further starts attempted.
- b. All personnel seated in the cockpit will have the seatbelt fastened prior to engine turn-up.

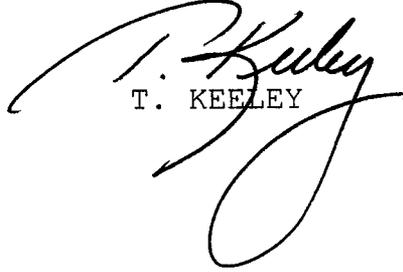
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c. Non-pilot turn-up personnel will not attempt to start engines using the emergency start switches (except as outlined in the checklist for gaspath and engine rinses).

d. Number two engine will not be started unless rotor brake pressure is a minimum of 400 pounds per square inch.

e. Non-pilot turn-up personnel will not advance the Number Two engine speed selector above ground idle.

f. Non-pilot turn-up personnel will not release the rotor brake with the Number Two engine running. In the event of inadvertent loss of rotor brake pressure with Number two engine running, the engine will be shutdown immediately.

  
T. KEELEY

Distribution:  
NASOCEANINST 5216.1X  
List I (11 and 30)

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**UH-3H NON-PILOT ENGINE TURN-UP RECOMMENDATION/AUTHORIZATION**

**PART I - NOMINEE'S CERTIFICATION OF UNDERSTANDING**

NAME \_\_\_\_\_ SSN \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ RATE \_\_\_\_\_ DIV \_\_\_\_\_

I thoroughly understand NATOPS engine/auto blade fold/spread/gaspath/rinse procedures for the model aircraft I have been nominated to operate and have read my Commanding Officer's instructions regarding the same. I will keep myself informed of any changes in operating procedures that may be promulgated by my Commanding Officer or higher authority.

SIGNATURE OF NOMINEE \_\_\_\_\_ DATE \_\_\_\_\_

**PART II - TRAINING/QUALIFICATION DATA**

TYPE DESIGNATION: INITIAL \_\_\_\_\_ REQUALIFICATION \_\_\_\_\_  
 WRITTEN EXAM: OPEN-BOOK \_\_\_\_\_ CLOSED BOOK \_\_\_\_\_ DATE \_\_\_\_\_  
 ORAL EXAM: RESULTS \_\_\_\_\_ DATE \_\_\_\_\_  
 CHECK TURN: RESULTS \_\_\_\_\_ DATE \_\_\_\_\_

NATOPS OR ASST. NATOPS INSTRUCTOR \_\_\_\_\_ DATE \_\_\_\_\_

**PART III - RECOMMENDATION**

DIVISION OFFICER \_\_\_\_\_ DATE \_\_\_\_\_  
 MAINTENANCE OFFICER \_\_\_\_\_ DATE \_\_\_\_\_  
 NATOPS OFFICER \_\_\_\_\_ DATE \_\_\_\_\_

**PART IV - AUTHORIZATION**

Recommendation is approved this date for the individual nominated in Part I and certified to have completed all necessary training and instructions to perform engine turn-up/blade fold/spread/gaspath/rinse procedures for specific type(s) of aircraft. Qualification is valid for one calendar year and expires at the end of the month qualified.

COMMANDING OFFICER \_\_\_\_\_ DATE \_\_\_\_\_

**PART V - REVOCATION**

Qualification on the above has been revoked on this date:

COMMANDING OFFICER \_\_\_\_\_ DATE \_\_\_\_\_

**PRIVACY ACT STATEMENT:** The information contained in this report is personal and is used/disclosed to military personnel of other components of the Department of the Navy who have the need for this information in the performance of their duties. Use/disclosure is provided under SECNAVINST 5211.5C. Unauthorized use/disclosure of information from this record may subject the user/disclosure to criminal penalties.

Enclosure (1)

NASOCEANAINST 3710.18B  
AUG 21 2003

**NAS OCEANA  
NON-PILOT ENGINE TURN-UP  
TRAINING SYLLABUS**

Enclosure (2)

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**AUG 21 2003**

NAME/RATE \_\_\_\_\_

SSN \_\_\_\_\_

NOTE: Instructors will be NPTQ, HAC or H2P Qualified.

1. **GENERAL REQUIRED READING**

	<u>TRAINEE INITIAL</u>	<u>DATE</u>
a. OPNAVINST 3710.7S Paragraphs 7.1.2.2 - 7.1.2.4	_____	_____
b. OPNAVINST 4970.2H VOL I Page 10-93, paragraphs 10.38.2 - 10.38.4	_____	_____
c. OPNAVINST 4790.2H VOL V, Chapter 12	_____	_____
d. NASOCEANAINST 13720.1F	_____	_____

2. **UH-3H NATOPS MANUAL REQUIRED READING**

a. <u>SYSTEMS</u> (CHAPTER 2)		
(1) ENGINES	_____	_____
(2) MAIN GEARBOX	_____	_____
(3) OVERSPEED SYSTEMS	_____	_____
(4) ELECTRICAL SYSTEMS	_____	_____
(5) AIRCRAFT LIGHTING	_____	_____
(6) FLIGHT CONTROLS/HYDRAULICS	_____	_____
(7) BLADE FOLD/UTILITY HYDRAULICS	_____	_____
(8) ENGINE CONTROLS	_____	_____
(9) INSTRUMENTS	_____	_____
(10) EMERGENCY EQUIPMENT	_____	_____

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	<u>TRAINEE</u> <u>INITIAL</u>	<u>DATE</u>
b. <u>LIMITATIONS</u> (CHAPTER 4)		
(1) ENGINES	_____	_____
(2) MGB	_____	_____
(3) STARTER	_____	_____
c. <u>NORMAL PROCEDURES</u> (CHAPTER 7)		
(1) PREFLIGHT	_____	_____
(2) LINE OPERATIONS	_____	_____
(3) NORMAL START		
(4) BLADE SPREAD		
(a) AUTOMATIC	_____	_____
(b) MANUAL	_____	_____
(5) BLADE FOLD		
(a) AUTOMATIC	_____	_____
(b) MANUAL	_____	_____
(c) HEAD POSITIONING	_____	_____
(6) SHUT DOWN PROCEDURES	_____	_____
(7) POST FLIGHT	_____	_____
d. <u>EMERGENCY PROCEDURES</u> (CHAPTER 12)		
(1) FIRE		
(a) ENGINE FIRE ON GROUND	_____	_____
(b) POST SHUTDOWN FIRE	_____	_____
(c) FUSELAGE FIRE	_____	_____
(d) HEATER FIRE	_____	_____
(e) ELECTRICAL FIRE	_____	_____

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	<u>TRAINEE INITIAL</u>	<u>DATE</u>	
(2) STARTER HANG UP	_____	_____	
(3) HOT START	_____	_____	
(4) ENGINE MALFUNCTIONS			
(a) COMPRESSOR STALL	_____	_____	
(b) LUBE PUMP SHAFT FAIL	_____	_____	
(c) HIGH SPEED SHAFT FAIL	_____	_____	
(d) AXIAL DRIVE SHAFT FAIL	_____	_____	
(e) Ng SIGNAL LOSS	_____	_____	
(f) P3 SIGNAL LOSS	_____	_____	
(g) FLEX DRIVE SHAFT FAIL	_____	_____	
(h) FUEL CONTAMINATION	_____	_____	
e. <u>NON-PILOT TURN-UP TESTS</u>			
	<u>SCORE</u>	<u>INSTRUCTOR</u>	<u>DATE</u>
(1) OPEN BOOK TEST	_____	_____	_____
(2) CLOSED BOOK TEST	_____	_____	_____
(3) ENGINE/BLADE FOLD SPREAD SIMULATED TURNUP (ORAL TEST)	_____	_____	_____

3. OPERATIONAL TRAINING

TURN-UP 1

Discuss:

- ADB review
- Pre-turn inspection
- Hand signals
- Radio procedures
- Fireguard and director requirements
- #1 engine start interlocks
- Emergency start switches
- Limitations

Emergency procedures:

- Hot start
- Hung start
- Engine fire
- Post-shutdown fire
- Flight control jammed or restricted

Observe:

- #1 engine start

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Trainee \_\_\_\_\_ Date \_\_\_\_\_

Instructor's signature \_\_\_\_\_

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**TURN-UP 2**

Review: TURN-UP 1

Discuss:

- Compressor stall
- Axial shaft failure
- Flex drive shaft failure
- High-speed shaft failure
- Lube pump/shaft failure
- Ng signal loss to fuel control
- Fuel control contamination
- Fuel filter bypass caution light
- Single instrument indications

Observe:

- #1 engine start
- Head check

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Trainee \_\_\_\_\_

Date \_\_\_\_\_

Instructor's signature \_\_\_\_\_

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TURN-UP 3

Review: TURN-UP 2

Discuss:

Servo sensor check

Servo check

Emergency procedures:

Flex drive shaft failure

Engine driven fuel pump failure

Fuel boost pump failure

Perform: \*

#1 engine start

Head check

\* INCLUDES ALL ASPECTS OF ENGINE START FROM ADB REVIEW TO SHUTDOWN.

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Trainee \_\_\_\_\_ Date \_\_\_\_\_

Instructor's signature \_\_\_\_\_

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TURN-UP 4

Review: TURN-UP 3

Discuss:

Blade-fold/spread procedures

Blade-fold/spread interlocks

Emergency procedures:

Engine fire

Lube pump/shaft failure

Single instrument indications

Perform (from ADB to shutdown):

#1 engine check

Head check

Observe:

Blade-fold/spread

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Trainee \_\_\_\_\_ Date \_\_\_\_\_

Instructor's signature \_\_\_\_\_

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TURN-UP 5

Review: TURN-UP 4

Discuss:

#2 engine start interlocks

Emergency procedures:

Compressor stall

Axial shaft failure

Inadvertent rotor engagement

Perform (from ADP shutdown):

#1 engine start

Head check

Blade-fold/spread

Observe:

#2 engine start

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Trainee \_\_\_\_\_ Date \_\_\_\_\_

Instructor's signature \_\_\_\_\_

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TURN-UP 6

Review: TURN-UP 5

Discuss:

Engine gaspath and rinse procedures

Emergency procedures:

High speed shaft failure

Ng signal loss to the fuel control

P3 signal loss to the fuel control

Post shutdown fire

Perform (from ADB to shutdown):

Engine gaspath and rinse

#1 and #2 engine start

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Trainee \_\_\_\_\_ Date \_\_\_\_\_

Instructor's signature \_\_\_\_\_

TURN-UP 7

Discuss:

Normal start procedures

Emergency procedures:

Inadvertent rotor engagement

Limitations

Blade fold/spread procedures

Gaspath/engine rinse procedures

Perform (from ADB to shutdown):

Engine gaspath/rinse \*

#1 and #2 engine start

Head check

Blade fold/spread \*

\* Optional for requalification

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Trainee \_\_\_\_\_ Date \_\_\_\_\_

NATOPS or Assistant NATOPS Instructor's signature \_\_\_\_\_

