



**UNITED STATES MARINE CORPS**

MARINE CORPS AIR STATION  
BOX 99100  
YUMA, ARIZONA 85369-9100

StaO 4790.25  
3DF3

23 NOV 1998

STATION ORDER 4790.25

From: Commanding Officer  
To: Distribution List

Subj: VIBRATION ANALYSIS PROGRAM

Ref: (a) OPNAVINST 4790.2G  
(b) NAVAIR 01-1A-24  
(c) NAVAIR 01-110HCE-2-6

Encl: (1) Vibration Analysis Qualification Form

1. Purpose. To establish Search and Rescue policies and procedures for the use and documentation of the Vibration Analysis Program in accordance with (IAW) references (a) through (c).

2. Background. The goal of this program is to use vibration analysis as a means to avoid catastrophic failure due to dynamic component unbalance, thereby increasing aircraft availability, reducing aircraft repair cost, improving safety and to provide insight assistance in troubleshooting vibration discrepancies. Additionally, vibration analysis has shown a reduction in maintenance man-hours, removal of serviceable components, and has also helped determine the cause of mechanical failures.

3. Action. The keys to a successful Vibration Analysis Program are:

a. Maintaining aircraft historical data for each aircraft assigned.

b. The overhaul of the HH-1N aircraft systems and its individual characteristics.

c. Establishing vibration limits for assigned aircraft and systems.

d. Maintaining proper H-1 vibration analysis equipment.

e. Ensuring personnel are properly trained/qualified.

f. Performing vibration analysis at a minimum, under the following conditions:

23 NOV 1998

- (1) At the completion of each aircraft Phase Inspection.
- (2) After changing major dynamic aircraft components.
- (3) Upon notification from aircrew of unusual vibrations.

#### 4. Responsibilities

a. Aircraft Maintenance Officer (AMO). Shall ensure that all personnel operating the vibration analysis test equipment are properly trained utilizing the Vibration Analysis Qualification Form, enclosure (2).

b. Maintenance Control (M/C). Shall ensure, "Perform Vibration Analysis", Visual Information Display System/Maintenance Action Forms are initiated for the following:

- (1) Part of Phase Inspections.
- (2) Engine change.
- (3) Removal/replacement of main driveshaft.
- (4) Removal/replacement of main rotor hub/blade.
- (5) Removal/replacement of Pitch Change Links main rotor/tail rotor.
- (6) Removal/replacement of tail rotor assembly.

c. Work Center 300

- (1) Assign a Vibration Analysis Program Manager.
- (2) Provide Quarterly training.
- (3) Perform required vibration analysis IAW references (a) through (c).

d. Vibration Analysis Program Manager

- (1) Conduct and document training to support the Vibration Analysis Program utilizing enclosure (1).
- (2) Ensure proper equipment and materials required for Vibration Analysis are available.

23 NOV 1998

(3) Coordinate with the Vibration Analysis Program Monitor for personnel to receive formal Naval Aviation Engineering Service Unit (NAESU) or authorized factory training.

(4) Ensure personnel who perform Vibration Analysis on the aircraft are qualified.

e. Quality Assurance Division

(1) Ensure compliance with all instructions pertaining to the Vibration Analysis Program.

(2) Designate a Vibration Analysis Program Monitor.

(3) Maintain Vibration Analysis historical data, by Bureau number, for aircraft assigned for a minimum of one complete Phase cycle.

(4) Screen incoming Vibration Analysis Data disks for future comparison in vibration trend analysis.

(5) Monitor the Vibration Analysis Program on a monthly basis utilizing Computerized Self-Evaluation Checklist special audits.

(6) Assist the Vibration Analysis Program Manager in obtaining formal training.

f. Individual Material Readiness List Manager. Ensure that Vibration Analysis Equipment is readily available and in a RFI status.

  
C. J. TURNER

DISTRIBUTION: SPL  
SAR (10)

23 NOV 1998

SEARCH AND RESCUE VIBRATION ANALYSIS QUALIFICATION FORM

Date \_\_\_\_\_

Name/Rank: \_\_\_\_\_

1. Required reading	Date completed	Initials
a. NA-1A-24	_____	_____
b. NA01-11OHCE-2-6	_____	_____
c. Local Vib/anal Program	_____	_____

2. Complete three Vibration Analysis print outs: Main Rotor Smoothing, Tail Rotor Track Balance, and Airframes Vibration Signatures.

Date: \_\_\_\_\_ A/C: \_\_\_\_\_ Test #: \_\_\_\_\_  
Supervisor: \_\_\_\_\_

Date: \_\_\_\_\_ A/C: \_\_\_\_\_ Test #: \_\_\_\_\_  
Supervisor: \_\_\_\_\_

Date: \_\_\_\_\_ A/C: \_\_\_\_\_ Test #: \_\_\_\_\_  
Supervisor: \_\_\_\_\_

3. SNM has completed the required reading and necessary training to perform unsupervised Vibration Analysis testing.

\_\_\_\_\_  
300 Division Work Center Supervisor

\_\_\_\_\_  
Quality Assurance