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# UH-1H
# PERFORMANCE TEST
# CO-1

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Air Force Human Resources Laboratory
Wright-Patterson Air Force Base, Ohio

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13. ABSTRACT

This series of 10 Advanced Type Job Performance Tests were developed for an assessment of the effectiveness of the UH-1H (Helicopter) Job Performance Aids (JPA) in use by the Vietnamese Air Force (VNAF). The 10 Tests were used to evaluate the three types of JPA in use by the VNAF; namely Job Guidance Manuals, Maintenance Dependency Type Troubleshooting Aids, and the Fully Proceduralized Troubleshooting Aids.

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Details of illustrations in
this document may be better
studied on microfiche

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18

TEST PACKAGE

PERFORMANCE TEST CO-1 (UH-1H)

TABLE OF CONTENTS


TEST ADMINISTRATIONS INSTRUCTIONS . . . . . SECTION I

FAULT INSERTION PROCEDURES . . . . . SECTION II

GENERAL INSTRUCTIONS . . . . . SECTION III

INFORMATION SHEETS . . . . . SECTION IV

TEST INSTRUCTIONS . . . . . SECTION V

PERFORMANCE EVALUATIONS SHEETS . . . . . SECTION VI

TEST ADMINISTRATION EVALUATION FORMS . . . . . SECTION VII



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II

PERFORMANCE TEST CO-1 (UH-1H)

TEST ADMINISTRATION INSTRUCTIONS

## INTRODUCTION

The purpose of this test is to determine whether a helicopter technician can make an operational check of the Tail Rotor Blade. The technician is told in his instructions that he is to check the track of the blade and adjust it if required. A translated copy of the Test Instructions is at Section V of this Test Package. The technician will pass the test when he can demonstrate to you that the tail rotor blade is in track.

## MATERIALS REQUIRED

To conduct this test you will need the following items of equipment and personnel:

1. a set of hand tools consisting of:
   a. 7/16-inch open-end wrench
   b. 1/2-inch open-end wrench
2. a UH-1H helicopter;
3. a qualified helicopter pilot (English-speaking) for helicopter operation;
4. access to a watch or clock;
5. a complete set of the job-aids or reference materials the technician is to use.

## PRE-TEST SET-UP

1. Review your copy of the Test Instructions or familiarize yourself with them.

2. Obtain the tools and equipment required as listed in the previous section.

3. Put the Tail Rotor "out-of-track" according to the procedures at Section II.

4. Instruct the pilot to start-up the helicopter for a Tail Rotor Track when requested by the technician, but to give the technician no assistance as to how to correct the problem.

## TEST ADMINISTRATION

1. When the technician arrives at the test area, insure that he has his tool kit with him.

2. Give the technician a copy of the General Instructions (Section III) to read.

3. When the technician returns the General Instructions to you, have him complete the Information Sheet (Section IV).

4. When he turns in the completed Information Sheet, give him the Test Instructions for Performance Test CO-1 (Section V).

5. While the technician reads his instructions, record his Serial Number on a copy of the Performance Evaluation Sheet for CO-1 and on the Test Administration Evaluation Form.

6. Point out to the technician the location of the job-aids to be used.

7. Have the technician begin the test and note the time begun in the appropriate space on the Performance Evaluation Sheet.

8. As the technician proceeds to perform the test, observe his actions using your Fault Insertion Procedures (Section II) as a guide. Record on the Performance Evaluation Sheet:

   a. the sequence in which the main tasks are performed

   b. the ID number from your procedures of any detailed steps that are omitted or incorrectly performed.

9. Stop the test when any of the following conditions apply:

   a. the technician has made the adjustment; or

   b. two hours have elapsed.

10. Indicate on the Performance Evaluation Sheet:

   a. whether the technician successfully adjusted the rotor;

   b. time and reason test stopped;

   c. the type of documentation used and the extent to which it was used.

11. Complete the Test Administration Evaluation Form.

12. Return the aircraft to either operational or test status as required.

13. Fasten the Technician's Information Sheet, Performance Evaluation Sheet, and Test Administration Evaluation Form together and store them in the back of the Test Package notebook. Insure that the technician has returned the copy of the Test Instructions.

Step 3. (Figure 3) Remove cotter pin ①, nut ② lock-washer ③ and bolt ④ on crosshead-end ⑤ of PITCH CHANGE LINK ⑥ (Two 7/16-inch open-end wrenches required for nut and bolt.)

Step 4. (Figure 3) Loosen jam-nut ⑦ on PITCH CHANGE LINK ⑥ (1/2-inch open-end wrench required for jam-nut.)

Step 5. (Figure 3) Pull crosshead-end assembly ⑧ out of crosshead ⑤. Lengthen PITCH CHANGE LINK ⑥ by turning crosshead-end assembly ⑧ one-half turn.

Step 6. (Figure 3) Tighten jam-nut ⑦ on PITCH CONTROL LINK 6.

Step 7. (Figure 3) Install bolt ④, lock-washer ③, nut ② and cotter pin ① on crosshead-end ⑤ of PITCH CONTROL LINK ⑥

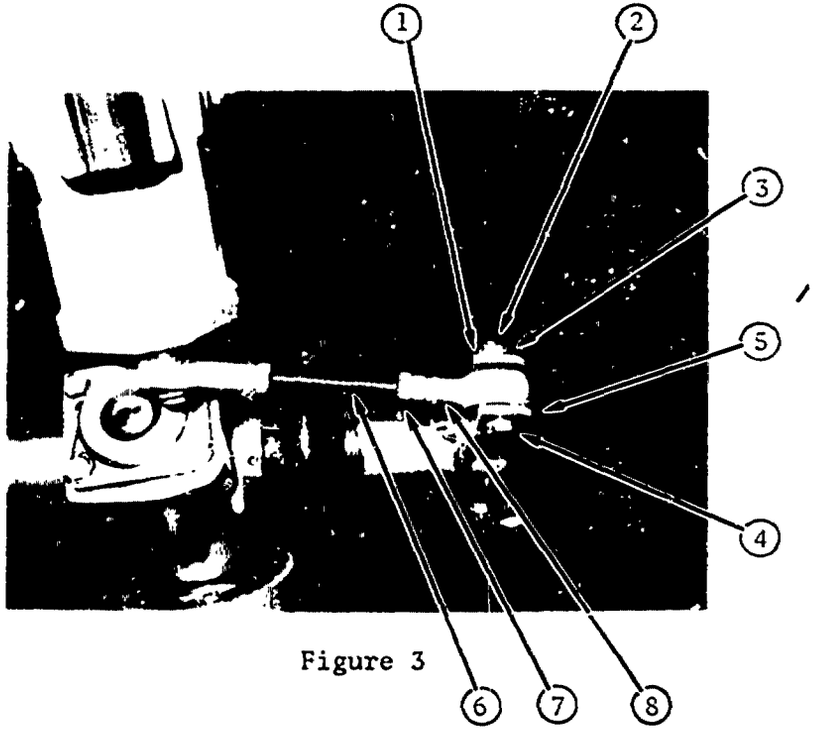



Figure 3

CO-1 (UH-1H)

## FAULT INSERTION PROCEDURES

### TAIL ROTOR BLADES

A. Before the technician arrives in the test area, perform the following steps to misadjust the TAIL ROTOR HUB AND BLADE ASSEMBLY.

Step 1. (Figure 1) Place a work stand at the left aft Tail Rotor Hub and Blade Assembly area of the helicopter to perform the required adjustment.

Step 2. (Figure 2) Two PITCH CHANGE LINKS (1) are shown, one for each blade. You need only misadjust one blade.

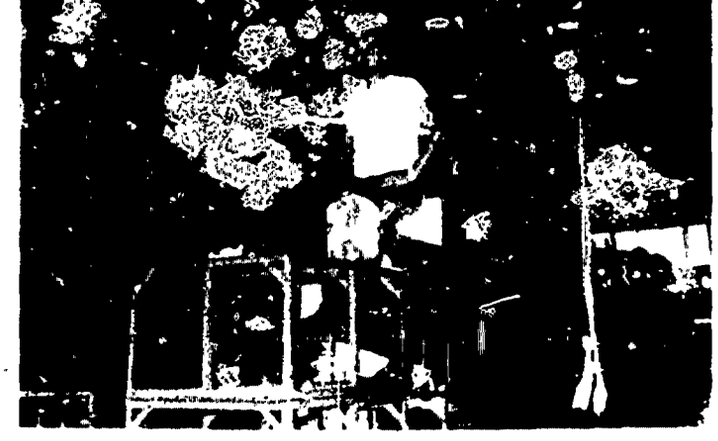


Figure 1

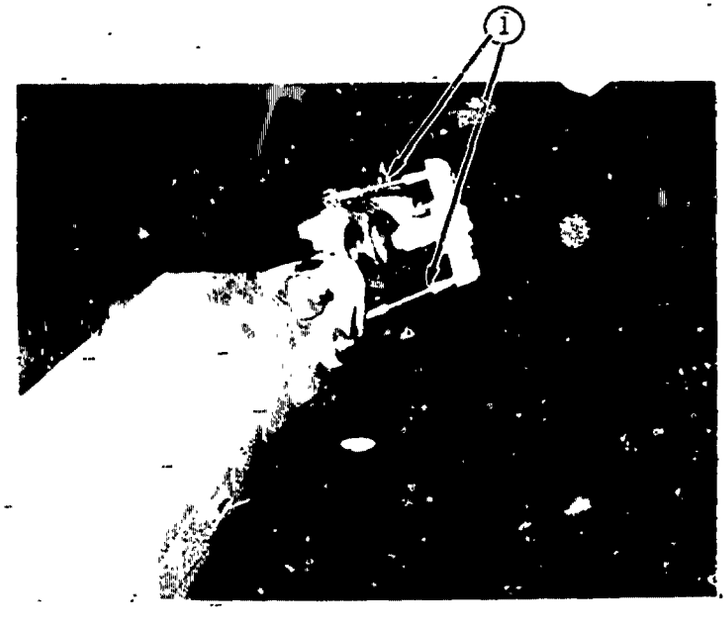



Figure 2

WARNING

Request inspection of the Tail Rotor Hub and Blade Assembly by qualified Technical Inspection personnel before proceeding with the next step.

Step 8. Have pilot start the engine. Run engine at 6600 rmp, with pedals in neutral position.

Step 9. Attach the sponge rubber to one end of the pine stick with tape. Cover rubber with Prussion blue paint, thinned with oil.

NOTE

If the above items are not available in this area, check with maintenance personnel to ascertain what type of marking device is available.

Step 10. (Figure 4) Rest marking device on underside of left tail boom assembly of the helicopter.

Step 11. (Figure 4) Slowly move marking device into disc of tail rotor. Move far enough to touch near blade approximately one inch from tip.

Figure 4

Step 12. (Figure 5) When near blade is marked, have the pilot stop the engine and allow the rotor to stop. Only one blade will be marked ①. This indicates the Tail Rotor Blades are "out of track".

NOTE

(Figure 6) If both blades are marked ①, Tail Rotor Blades are "in track".

Step 13. Clean the paint from the marked blade.

B. The helicopter is now prepared for student testing

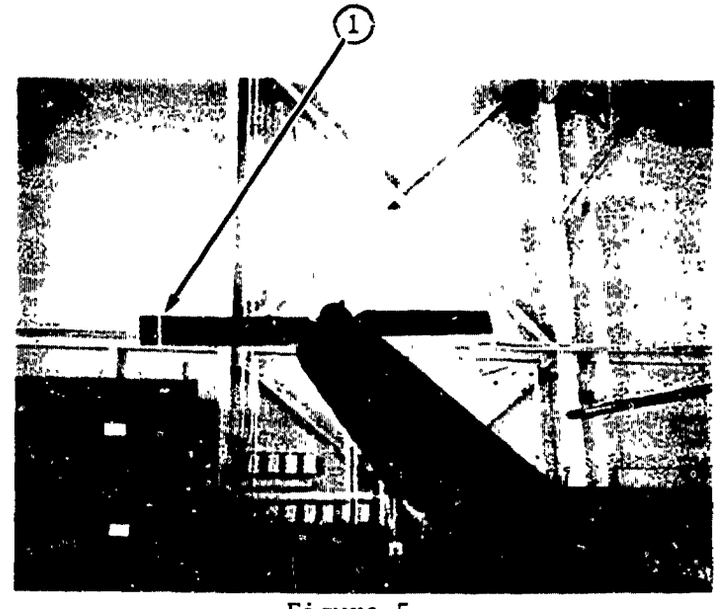
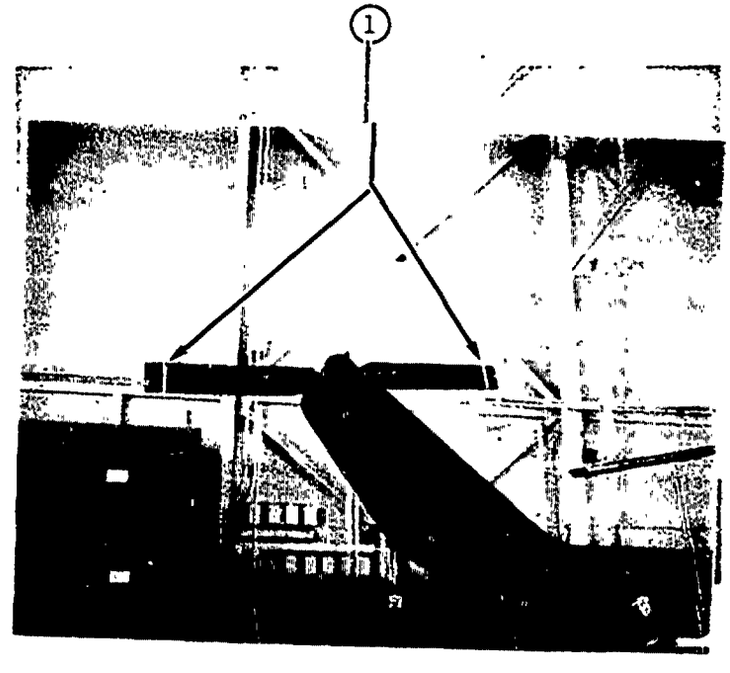



Figure 5



## GENERAL INSTRUCTIONS

You have been selected to participate in a study of helicopter maintenance procedures. During this study you will be asked to perform specific maintenance tasks. Some of these may be tasks that are unfamiliar to you. You are to attempt to perform each task using the manuals that you will receive from the Test Administrator.

The Test Administrator will give you specific written instructions for each task you are to perform. Read the instructions carefully. They are the only instructions you will receive. The Test Administrator does not speak Vietnamese. You will have to use hand-signals with him.

Upon completion of your participation in this study, do not discuss your activities with the other personnel in your organization. If you do, it will mean that the tests will not tell us what we need to know.

When you have read and understood these instructions, return this sheet to the Test Administrator. He will then give you an information sheet to fill out.

## GENERAL INSTRUCTIONS

Bạn được chọn lựa để tham dự vào cuộc nghiên cứu phương pháp sửa chữa máy bay trực thăng. Trong cuộc nghiên cứu này, bạn sẽ làm số công tác bảo trì nhất định. Một số công tác nầy có thể là mới lạ đối với bạn. Bạn phải thử làm từng công tác một bằng cách xử dụng các cuốn "Hướng-dẫn Công-tác" mà giám khảo sẽ cho bạn. không được phép xử dụng sách vở hoặc tài liệu nào khác.

Vị giám khảo sẽ cho bạn biết các chỉ thị viết ra rõ ràng cho mỗi công tác mà bạn phải thực hành. Bạn hãy đọc kỹ lưỡng các chỉ thị này. Các chỉ thị đó sẽ là những chỉ thị duy nhứt mà bạn sẽ nhận được. Vị giám khảo không nói được tiếng Việt nam, vậy bạn phải dùng tay ra dấu để liên lạc với vị đó.

Sau khi tham dự cuộc nghiên cứu nầy, bạn đừng nói chuyện gì về các hoạt động đó với ai khác trong đơn vị của bạn. Vì nếu bạn nói ra thì kết quả cuộc trắc nghiệm sẽ không giúp cho chúng tôi biết được những điều cần biết.

Sau khi bạn đã đọc và thông hiểu những lời chỉ dẫn, bạn hãy hoàn lại tấm giấy này cho vị giám khảo. Vị giám khảo sẽ trao cho bạn một tờ giấy tham khảo để bạn điền vào.

INFORMATION SHEET

NAME_____ RANK_____

SERIAL NUMBER_____ MILITARY UNIT_____

HOW LONG HAVE YOU BEEN WORKING ON THE UH-1 HELICOPTER? (check one)

____ 0 - 6 months ____ 12 - 18 months

____ 6 - 12 months ____ over 18 months

WHAT TYPE OF TRAINING HAVE YOU HAD ON THE UH-1 HELICOPTER? (check one)

____ U. S. School training ____ On-the-job training

Where_____ ____ Other

____ Vietnamese School training

Where_____

INFORMATION SHEET

Họ và Tên: _____ Cấp bậc: _____

Quân số: _____ Đơn-vị: _____

BẠN ĐÃ SỬA CHỮA MÁY BAY TRỰC THĂNG ĐƯỢC BAO LÂU RỒI? (Hãy gạch chéo một trong những câu trả lời sau đây)

___ 0 - 6 tháng

___ 6 - 12 tháng

___ 12 - 18 tháng

___ trên 18 tháng

BẠN ĐÃ ĐƯỢC HUẤN LUYỆN VỀ MÁY BAY TRỰC THĂNG LÀM SAO? (Hãy gạch chéo một trong những câu trả lời sau đây)

___ Trung tâm Huấn luyện Hoa kỳ

ở đâu _____

___ Trung tâm Huấn luyện Việt nam

ở đâu _____

___ Huấn luyện tập nghề

___ Loại huấn luyện khác

PERFORMANCE TEST -- CO-1 (UH-1H)

TEST INSTRUCTIONS

1. Your job in this test is to make an operational check of the Tail Rotor Blade. If you find that it is "out of track" you are to make the necessary adjustments to put it back in track.

2. You must use the manuals that have been provided to you. You may not use any other written materials.

3. You have a maximum of two hours to complete this test.

4. Use your own tool kit to perform this test. If you need any special tools or equipment, get them from the Test Administrator.

5. A pilot is available to run up the engine when you need it. Just indicate to the Test Administrator that you want the engine started.

PERFORMANCE TEST - CO-1 (UH-1H)

TEST INSTRUCTIONS

1. Nhiệm vụ của bạn trong cuộc trắc nghiệm này là kiểm soát sự sắp hàng của Cánh quạt rô-to đuôi. Nếu bạn thấy cánh quạt đó không đúng lối đi, bạn hãy điều chỉnh sao cho cánh quạt đó vào đúng lối đi.

2. Bạn phải dùng cuốn "Hướng dẫn công tác" mà bạn đã nhận được. Bạn không được xử dụng bất kỳ tài liệu nào khác.

3. Bạn có tối đa 2 giờ đồng hồ để hoàn tất công tác này.

4. Bạn hãy xử dụng tới dụng-cụ riêng của bạn để thực hành cuộc trắc nghiệm này. Nếu bạn cần dụng cụ khác hoặc vật liệu gì đặc biệt, bạn hãy hỏi vị giám khảo.

5. Có một phi công để cho máy chạy khi nào bạn cần cho chạy. Bạn chỉ việc báo cho vị giám khảo biết là bạn muốn cho máy chạy.

PERFORMANCE TEST CO-1 (UH-1H)

PERFORMANCE EVALUATION SHEET

1. TECHNICIAN SERIAL NUMBER _____

2. TIME TEST STARTED _____ TIME TEST STOPPED _____

3. REASON TEST STOPPED:

____TEST COMPLETED ____TIME ELAPSED ____UNABLE TO PERFORM

4. RECORD SEQUENCE IN WHICH MAIN TASKS ARE PERFORMED:

REQUEST ENGINE RUN-UP ____ REPEAT OPERATIONAL CHECK ____

MAKE OPERATIONAL CHECK ____ REPEAT ADJUSTMENT ____ (IF REQUIRED)

PERFORM ADJUSTMENT ____

5. INDICATE BELOW ANY STEPS FROM YOUR PROCEDURES THAT THE TECHNICIAN DID NOT OR WAS UNABLE TO PERFORM: (USE PAGE AND STEP NO. ID)

1. _____ 4. _____

2. _____ 5. _____

3. _____ OTHER _____

6. WAS TECHNICIAN ABLE TO PUT THE TAIL ROTOR BACK IN "TRACK"?

___ YES ___ NO

7. EXTENT TO WHICH TECHNICIAN USED _____ MANUAL:

0 25% 50% 75% 100%

8. HAD THE TECHNICIAN EVER PERFORMED THIS TASK BEFORE? (DETERMINE THROUGH TRANSLATOR OR FROM SUPERVISOR)

___ YES ___ NO

## TEST ADMINISTRATION EVALUATION FORM

TEST IDENTIFICATION _____

TECHNICIAN SERIAL NUMBER _____

| | YES | NO | DON'T KNOW |
|---|---|---|---|
| 1. Was there an opportunity before the test for contact between this technician and one who had already taken this test? | | | |
| 2. Could test subject observe others taking this test before he took it? | | | |
| 3. Was any unscheduled assistance give to the technician by you, the pilot, Technical Inspector, etc.? | | | |
| 4. Was technician excused from the test area during the course of the test for any reason (Men's Room, Tool Room, etc.)? | | | |
| 5. Did the technician consult any other manuals or consult with other personnel during this test? | | | |

6. Other comments:

_____

_____

_____