INTRODUCTION

1. The condition and health monitoring program conducted by Navy Aviation Systems Program Office (NASPO) monitors nominated aircraft systems and aeronautical product, under defined operating conditions, to ensure the system and/or aeronautical product is operating within design specification, tolerance and limitations.

2. A number of complimentary methods are used to determine the condition or health of aircraft systems, for example Vibration Analysis (VA), Oil Condition Analysis (OCA), Hydraulic Fluid Analysis (HFA), Wear Debris Analysis (WDA), Spectrometric Oil Analysis (SOA), Pressure, Temperature, Electrical Measurements, Non Destructive Testing, etc.

3. Data from these methods is compared with established baseline data, and then trended and evaluated against predetermined values based on expected normal operating characteristics. Thus enabling engineering staff to carry out condition assessment of systems and equipment using non-intrusive procedures. CHM provides a valuable insight into the health of aircraft and aeronautical product that is otherwise not available to maintenance staff and operators. The primary objectives of Naval aviation CHM are to:

a. Maximise the reliability, availability and safety of naval aircraft. This can be achieved by detecting incipient failures of critical aircraft components or aeronautical product.

b. Reduce the cost of ownership of naval aircraft. This can be achieved by using CHM information to extend or reduce maintenance intervals or improving maintenance practices by conducting trend analysis of the CHM data.

c. Assist and provide Reliability data to assist with reliability improvement programs conducted by NASPO Maintenance Requirements Determination (MRD) staff.

SPECTROMETRIC OIL ANALYSIS

4. Naval aviation operates four rotary wing aircraft types in the most hostile aircraft operating environment. These aircraft carry out their mission form the southern Ocean to the deserts of the Middle East and all places in between. To ensure that the aircraft can meet there mission part of the maintenance regime is to conduct spectrometric oil analysis.

5. SOA samples are taken by maintenance personnel and forwarded to the contracted oil analysis organisation. The contracted oil analysis organisation forwards the results of all oil analysis electronically to the NASPO Condition and Health Monitoring Cell for retention and trending.

6. With the introduction of the Dingo FleetOil™ system each individual report can be scanned for reporting errors prior to be being inducted into the system thus reducing

corrupt data entering the system. Abnormal trends or alarms are displayed automatically upon introduction of electronic data directly from the contractor and can be printed out to form part of the report that is sent to the relevant engineer for analysis.

7. Dingo FleetOil™ allows the time spent previously resolving data problems to be spent monitoring trends, refining alarm levels and being more pro active over the whole conditioning monitoring program.