

**ICAO Universal Safety Oversight Audit Programme**

**AUDIT SUMMARY REPORT**

**OF THE**

**DIRECTORATE GENERAL OF CIVIL**

**AVIATION AND METEOROLOGY**

**OF OMAN**

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*(Muscat, 14 to 19 April 2001)*



**INTERNATIONAL CIVIL AVIATION ORGANIZATION**



# ICAO UNIVERSAL SAFETY OVERSIGHT AUDIT PROGRAMME

## Audit Summary Report on the Safety Oversight Audit Mission to Oman

(Muscat, 14 to 19 April 2001)

### 1. BACKGROUND

1.1 The Directorate General of Civil Aviation and Meteorology of Oman (DGCAM) was initially assessed under the voluntary ICAO Safety Oversight Assessment Programme from 21 to 27 March 1997 by an ICAO assessment team. This audit was carried out from 14 to 19 April 2001 pursuant to Assembly Resolution A32-11 and in accordance with the updated Memorandum of Understanding (MOU) agreed on 10 May 2000 between Oman and ICAO. The objectives of this audit were twofold. Primarily, its objective was to fulfill the mandate given to ICAO pursuant to the above-mentioned Assembly Resolution. Secondly, the audit was conducted with the objective of ascertaining the progress made in the implementation of the recommendations forwarded during the voluntary assessment conducted in 1997 and to re-ascertain the safety oversight capability of the DGCAM of Oman. The audit also aimed to ensure that Oman is in conformity with ICAO Standards and Recommended Practices (SARPs), as contained in Annexes 1, 6 and 8 to the *Convention on International Civil Aviation* (Chicago Convention), associated guidance material and good aeronautical practices.

1.2 On 19 June 2001, Oman submitted an action plan addressing all the findings and recommendations contained in the audit interim report and also submitted, on 7 August 2001 and 23 October 2001, comments and clarifications of some of the items contained in the audit interim report. The action plan submitted was reviewed by the Safety Oversight Audit (SOA) Section and was found to be satisfactory. The comments and clarifications provided were, as appropriate, taken into consideration in the preparation of this report.

### 2. CIVIL AVIATION ACTIVITIES IN OMAN

At the time of the audit, civil aviation activities in Oman included:

a) number of technical staff employed by the organization at Headquarters	9
b) number of regional offices	1
c) number of technical staff employed at regional offices	2
d) number of active pilot licences	664
e) number of active flight crew licences other than pilot licences	7
f) number of active licences other than flight crew licences	805
g) number of commercial air transport operators	2

h) number of air operator certificates (AOCs) issued	3
i) number of aircraft operations inspectors	3
j) number of aircraft registered in Oman	59
k) number of Certificates of Airworthiness (C of A) issued	59
l) number of approved maintenance organizations (AMOs)	46
m) number of aircraft maintenance workshops	46
n) number of design organizations	5
o) number of aircraft type certificates issued/validated	6
p) number of type certificates other than aircraft issued/validated	6
q) number of aircraft airworthiness inspectors	7

### 3. SUMMARY OF FINDINGS

#### 3.1 General statement

3.1.1 The primary aviation legislation of Oman is the *Civil Aviation Law* of 1975 (the “*Law*”), adopted in 1975. The *Law* provides for the establishment of a State civil aviation organization, describes the organization’s duties and responsibilities and empowers the Minister responsible for civil aviation to regulate and administer all civil aviation-related activities. The *Law* contains adequate provisions for the enforcement of regulations and empowers civil aviation inspectors to undertake their responsibilities in the most effective manner. Civil Aviation Regulations (CARs), promulgated as subsidiary legislation, have been enacted by the DGCAM. The CARs are largely based on regulations adopted from other Contracting States (the United Kingdom Civil Aviation Authority (UKCAA), the United States Federal Aviation Authority (U.S. FAA) and the European Joint Aviation Authorities (JAA) and there is a need for the CARs to be reviewed for consistency and coherency. The DGCAM has also established a system of regulatory instruments for augmenting the CARs. Oman has ratified Article 83 *bis* to the Convention; however, it has not yet amended its legislation to give effect to its provisions.

3.1.2 The Director General of Civil Aviation and Meteorology (DGCAM) is the government agency responsible for civil aviation in Oman. It is headed by the Director General, who is appointed by the Minister of Transportation and Housing and reports directly to him. The DGCAM is composed of eight departments headed by a Director and in some cases by an Assistant Director. The Department of Flight Safety of the DGCAM is composed of three main Sections — Aircraft Licensing, Aviation Operations and Airworthiness — responsible for aviation activities related to Annexes 1, 6 and 8. The DGCAM has not established effective procedures for the recruitment of technical personnel and it has not established minimum training qualification requirements for new employees. There is no overall training policy or comprehensive

training programme to ensure continuing professionalism and maintenance of competency of its technical staff.

3.1.3 Personnel licensing activities in Oman are limited to the issuance and/or validation of licences on the basis of licences issued by other Contracting States. The DGCAM has not established a system for ascertaining the authenticity of foreign licences presented to it. Although examinations are conducted for the issuance of licences, they are conducted by personnel designated by the air operators with no control or supervision on the part of the DGCAM. The DGCAM has designated several physicians to conduct medical examinations on its behalf, but has not established written requirements and procedures for the designation, control and supervision of medical examiners.

3.1.4 Certification procedures for air operators are established in the Operations and Airworthiness Inspector Handbooks, which require the coordination of both operations and airworthiness inspectors in the initial and continuing certification of operators. AOCs are issued on a continuing basis and associated operations specifications are issued as an independent document, subject to renewals and changes at the request of the operator. The Aviation Operations Section has three fully qualified flight operations inspectors who have the appropriate experience and credentials for supervision and control of Omani's flight operations. There are also other responsibilities assigned to this Section, such as training and cabin safety surveillance, which are still being formulated and have not yet progressed to a satisfactory level. The *Operations Inspector Handbook* is based on ICAO Doc 8335 and contains several inspection checklists for each type of inspection required. The system established for AOC holders does not include a comprehensive provision for renewal and AOCs are renewed without an in-depth inspection to ascertain continued compliance with the CARs.

3.1.5 The DGCAM's airworthiness supervision and control activities in Oman are the responsibility of the Airworthiness Section which consists of seven inspectors, including the supervisor. These inspectors perform activities related to the issuance of certificates of airworthiness, the approval and supervision of air operators (maintenance aspects), maintenance organization approvals, and the conduct of accident/incident investigations, in addition to other tasks linked to operations and licensing. The Airworthiness Section is minimally staffed for the present level of aviation activities which impacts on the ability to conduct effective surveillance. Furthermore, the absence of a technical airworthiness library and the non-availability of effective design organization information hampers the DGCAM's effort to control and supervise airworthiness activities in and out of Oman.

## 3.2 Primary aviation legislation and civil aviation regulations in Oman

### 3.2.1 Abstract of findings

3.2.1.1 The primary aviation legislation in Oman is the *Civil Aviation Law* of 1975 which provides the general definitions and framework for air transportation activities in Oman. Chapter One provides for the establishment of a State civil aviation organization, and Article 2 describes the organization's duties and responsibilities. The *Law* empowers the Minister responsible for civil aviation to regulate and administer all activities related to civil aviation. The *Civil Aviation Law* has not been amended since originally promulgated in 1975.

3.2.1.2 The *Civil Aviation Law* contains enforcement and penalty provisions and the DGCAM has responsibility for enforcement of the *Law* and regulations. Monetary penalties established in the *Civil*

*Aviation Law* of 1975 have not been updated since its promulgation in 1975, but the DGCAM has implemented a system of notices that augment these penalties. Few records of enforcement were available for review, despite historical records showing some contraventions to the CARs and incidents reflecting maintenance malpractice occurring this year.

3.2.1.3 Provisions are included in the *Civil Aviation Law* and regulations regarding the empowerment of inspectors, including unrestricted access for inspection of aviation installations (aerodromes, hangars, workshops, ramp, fuel storage and operators' offices). Inspectors are provided with government credentials for carrying out their duties, which conform to ICAO guidelines. A DGCAM inspector has the right to detain aircraft or to prevent a person from exercising the privileges of a licence or certificate for just cause.

3.2.1.4 The DGCAM has promulgated the Civil Aviation Regulations (CARs) to enable the implementation of ICAO SARPs. These regulations are contained as subsidiary legislation under the *Civil Aviation Law* and are empowered by Articles 2 and 3 of this *Law*. They are contained in three volumes and cover most aspects of aviation in Oman. The CARs have been developed recently and their implementation is still in progress.

3.2.1.5 The CARs are largely based on regulations of other Contracting States, such as the UKCAA, the U.S. FAA and the European JAA. A review of these regulations revealed a lack of coherence in the application and implementation of these adopted regulations. It also revealed that some conflicts exist among the adopted regulations, and no precedent has been established to state which regulatory or advisory information takes priority. In many cases the regulations have been copied verbatim with many of the original references to the U.S. FAA or JAA. They also contain requirements to report to the source authority and not to the DGCAM.

3.2.1.6 The DGCAM has a system of augmenting the CARs through a system of regulatory instruments that are contained in specific DGCAM orders, directives, technical notices and instructions. All of these legal instruments are empowered through Article 2 of the *Civil Aviation Law*, which empowers the Director General to "prescribe the rules and regulations necessary for the implementation of the *Civil Aviation Law*". The DGCAM has notified ICAO of differences between CAR 61 and the provisions of Annex 1 but has not notified ICAO of differences between its national regulations and the SARPs relating to aircraft operations and airworthiness of aircraft as set forth in Annexes 6 and 8. Oman has not published significant differences in its national Aeronautical Information Publication (AIP) as required by paragraph 4.1.2 of Annex 15.

3.2.1.7 Oman has ratified Article 83 *bis* to the Chicago Convention; however, it has not amended the State legislation or regulations to give effect to its provisions. Oman has entered into some agreements with other Contracting States based on Article 83 *bis* but has not registered those agreements with ICAO. Oman has not established a system to ensure that States to which functions and responsibilities are transferred are, in fact, capable of adequately performing those duties and functions.

3.2.2 **Corrective action proposed/implemented by Oman**

3.2.2.1 *With respect to the recommendation to amend the Civil Aviation Law to ensure its conformity with the Chicago Convention and associated Annexes, the DGCAM indicated that it will review*

existing legislation and propose any necessary changes to the Minister before October 2003. The new legislation is expected to be in place before June 2004.

3.2.2.2 *The DGCAM indicated in its action plan that it does enforce the provisions of the Civil Aviation Law when a contravention to the CARs occurs but in order to improve record-keeping of enforcement actions, the DGCAM will establish and periodically monitor enforcement files beginning July 2001.*

3.2.2.3 *In order to properly implement the provisions of Article 83 bis of the Chicago Convention, the DGCAM will review and amend existing legislation and propose changes to the Minister before October 2003. An amendment to the legislation will be produced before June 2004.*

3.2.2.4 *The DGCAM has agreed to review, amend, and republish the CARs before December 2003 in order to resolve conflicts and to specify which of the adopted regulations have precedence, as well as to remove any references to report to foreign authorities that have no jurisdiction over Omani-registered aircraft.*

3.2.2.5 *The DGCAM indicated that it will systematically verify the conformance of its regulations with ICAO SARPs and establish an amendment system before March 2002, in order to implement changes to the SARPs in a timely manner. Any differences to the Annexes will be notified to ICAO before 1 July 2003 and published in the State AIP before October 2003.*

### 3.3 **Civil aviation organization system in Oman**

#### 3.3.1 **Abstract of findings**

3.3.1.1 The Directorate General of Civil Aviation and Meteorology (DGCAM) is the government agency responsible for civil aviation activities in Oman. The *Civil Aviation Law* specifically empowers the Minister of Transportation and Housing through the Director General of the DGCAM to control and supervise civil aviation activities. On the basis of Article 2 of the *Law*, and through Ministerial Decree 5/95, this power is delegated to the Director General of the DGCAM to act as the Chief Executive Officer for civil aviation matters in Oman. This same *Law* establishes the legal basis for the establishment of the DGCAM to regulate Oman's civil aviation industry.

3.3.1.2 The DGCAM is composed of eight departments headed by a Director and in some cases by an Assistant Director. They are: the Department of Air Transport, the Department of Flight Safety, the Seeb Airport Department, the Salalah Airport Department, the Department of Administration and Financial Affairs, the Department of Meteorology, the Department of Air Navigation Services and the Department of Planning and Projects.

3.3.1.3 The Department of Flight Safety is composed of three main Sections: Airworthiness, Aviation Operations and Aircraft Licensing. These Sections are responsible for aviation activities pertaining to safety oversight activities contained in Annexes 1, 6 and 8.

3.3.1.4 The headquarters of the DGCAM is located at the Seeb International Airport outside Muscat. In addition, there is an office located in Bahrain which is responsible for Gulf Air, Oman's largest

international air carrier. There is a need for specific guidelines and procedures for supervision and control over this office and for an increase in surveillance activities.

3.3.1.5 The Department of Flight Safety presently employs a total of thirteen inspectors, including two personnel licensing officers, three flight operations officers hired as consultants, seven airworthiness inspectors and a supervisor. They are supported by four clerical staff. The number of inspectors in the regional offices and in the maintenance organizations located abroad is considered insufficient.

3.3.1.6 The major international airline of Oman is managed by four Contracting States, each sharing different aspects of operations, airworthiness and licensing. However, there is no established system or procedure for oversight to ensure the proper delegation of authority among States and other agencies and persons who act on behalf of the DGCAM. Continuing inspection and surveillance records were not available.

3.3.1.7 A personnel licensing officer and a consultant flight operations officer are assigned to the office in Bahrain. There is no airworthiness officer assigned to this regional office. The airworthiness activities of this office mandate that an airworthiness inspector be assigned to act as Principal Maintenance Inspector in charge of airline airworthiness safety oversight activities. There are a total of two administrative and clerical staff which is considered inadequate to assist the technical personnel, and there is no technical librarian.

3.3.1.8 The DGCAM has not established effective procedures for the recruitment of technical personnel, and it has not established minimum qualification requirements for new employees. Terms of reference (job functions) have not been established for each technical post. The Director General of the DGCAM is fully responsible for the recruitment and selection process; however, no written procedures have been established. No employee turnover was observed and the DGCAM is considered to be a competitive employer.

3.3.1.9 The DGCAM has not established an overall training policy or comprehensive training programme to ensure continuing professionalism and maintenance of competency of its technical staff. New staff receive induction training on an ad hoc basis. On the job training (OJT) is mandatory and is completed in an average of six months.

3.3.1.10 The DGCAM budget is fully derived from the government's central budget. The resources generated by the DGCAM (licence fees, airport taxes, etc.) go to the central treasury and are available to the DGCAM who has full control over its expenditures, provided it stays within the allocated budget. Present funding is considered adequate.

3.3.1.11 The DGCAM has been provided with adequate work space. Technical staff are provided with most of the necessary tools and equipment, including access to the Internet, but microfilm and microfiche readers are not available. Although the DGCAM has a library with ICAO documentation and several small collections of other documents, there is no central technical library available to inspectors in the Department of Flight Safety. Technical publications and manufacturer's manuals are in short supply. The DGCAM does not have revised aircraft flight manuals for all aircraft types operated by certificated operators. There are few technical periodicals and books available and only a minimal complement of additional aviation reference materials. There is no comprehensive list of available documents, no system for the dissemination of revisions to technical documents and no single person responsible for maintenance of the library.

3.3.1.12 Chapter 10 of the *Civil Aviation Law* assigns the sole responsibility for the investigation of aircraft accidents to the DGCAM which is also responsible for oversight of the aviation industry in the State. This dual role could create a perception of a conflict of interest, with the DGCAM personnel establishing primary causes of accidents within the industry they regulate.

### 3.3.2 **Corrective action proposed/implemented by Oman**

3.3.2.1 *In order to improve the guidelines and procedures for supervision of the Bahrain office and statewide surveillance activities, the DGCAM will review, amend, and merge the airworthiness, flight operations and licensing manuals into one new Flight Safety Office Manual before October 2002. Principal inspectors will be assigned responsibility for specific operators before October 2001.*

3.3.2.2 *The DGCAM will implement an enhanced surveillance system which includes improved planning, record-keeping, and follow-up procedures for all air operators and maintenance organizations beginning January 2002. Beginning 1 August 2001, the DGCAM will review surveillance files to ensure that annual surveillance has been carried out prior to the renewal of an AOC and will schedule surveillance visits of AOC holders as required. With respect to the oversight of Gulf Air, the DGCAM clarified that it is the sole regulatory authority responsible for Gulf Air and that no aviation functions are delegated to any of the civil aviation authorities of the co-owner States of Gulf Air.*

3.3.2.3 *The DGCAM will improve its existing guidelines and procedures for the supervision and control of air operators, approved maintenance organizations and subcontractors before 31 July 2002.*

3.3.2.4 *With respect to the hiring and training of technical staff with appropriate qualifications, the DGCAM will establish a written policy for the recruitment of qualified inspectors and institute a training policy and programme for technical staff to be approved by the Director General and implemented beginning January 2002.*

3.3.2.5 *The DGCAM will centralize and expand the flight safety technical library to ensure the availability of all relevant aviation safety documents, books, and periodicals before January 2002. The new system will include a designated librarian and procedures for the timely acquisition of publications.*

3.3.2.6 In response to the recommendation concerning the investigation of aviation accidents, the DGCAM indicated that it will develop a system before November 2002, including all necessary criteria, policies and procedures for convening an accident investigation board. The DGCAM clarified that its current practice is to invite experts from foreign governments and local aviation companies to serve on short-term accident investigation boards when needed. This eliminates the perception of any conflict of interest and maintains transparency during the course of investigations.

### 3.4 **Personnel licensing and training in Oman**

#### 3.4.1 **Abstract of findings**

3.4.1.1 The issuance of personnel licences in Oman is governed by Chapter 6 of the *Civil Aviation Law*, which defines the obligations for aviation personnel to hold an appropriate licence and to have the

proper qualifications when acting as a flight crew member. This *Law* also empowers the DGCAM to issue, refuse, revoke or suspend all licences for most specialties and works related to civil aviation.

3.4.1.2 In line with Article 2 of the *Civil Aviation Law*, the DGCAM has promulgated specific personnel licensing regulations in 1999 which contain the following CARs:

- CAR 61: *Licensing: pilots and flight operations;*
- CAR 63: *Licensing: maintenance;*
- CAR 66: *Certifying staff — maintenance;*
- CAR 141: *Pilot schools;* and
- CAR 147: *Aviation maintenance technician schools.*

3.4.1.3 Personnel licensing regulations are developed by the DGCAM on the basis of Annex 1 provisions, and contain several references to the JARs, the U.S. FARs and the UK regulations. However, significant conflicts and contradictions were observed among the different sets of adopted regulations, for example between CAR 63 and CAR 66. In addition, several differences exist between the CARs and Annex 1 requirements which have not been notified to ICAO. The provisions of Annex 1, Chapter 5 — *Specifications for Personnel Licences*, which require birth dates to be included in all licences, have not been implemented.

3.4.1.4 The DGCAM has also published several Civil Aviation Notices (CANs) containing the standards, policies, procedures and guidelines. These notices are very informative for the industry and potential applicants. They are signed and empowered by the Director General of the DGCAM and include:

- CAN 4-01: *Pilot Designated Examiner and Licensing Procedures Manual;*
- CAN 4-02: *Licensing of Aircraft Maintenance Engineers;* and
- CAN 4-03: *Renewal of Aircraft Maintenance Engineers' Licences.*

3.4.1.5 The licensing office is directly under the supervision of the Department of Flight Safety and a formal Personnel Licensing (PEL) Section has been established with one regional office under its supervision. However, the Chief of the Personnel Licensing Section is located in Bahrain where he is also assigned responsibilities as the DGCAM Flight Safety Representative for Gulf Air. He is assisted in Oman by one personnel licensing officer. Four clerical staff (two in Bahrain and two in Oman) help the personnel licensing technical staff to discharge their responsibilities. The DGCAM has not clearly indicated the lines of duties and responsibilities for the different PEL sections and for the flight safety representative in Bahrain.

3.4.1.6 The licensing actions taken by the PEL staff are not adequately documented in guidelines or procedures and no licensing handbook is available. There are no procedures for establishing the delegation of authority for personnel licensing and no formal licensing orientation/regulatory training is provided. Personnel licensing activities in the DGCAM are divided among several sections in the Department of Flight Safety and also include designated examiners. There are no clear terms of reference or procedures for the designation and supervision of examiners.

3.4.1.7 The approval of personnel licensing and training courses is the principal responsibility of flight operations inspectors. Three consultants have been recruited on yearly contracts to perform this task. With regard to the issuance of AME licences, airworthiness inspectors process the applications and perform

the interviews. The personnel licensing staff is not involved in the administration or examination of AMEs, as this function is assigned to the Airworthiness Section.

3.4.1.8 The PEL Section has a technical library where all ICAO documents and technical documentation on personnel licensing are maintained.

3.4.1.9 Licences issued in Oman include the private pilot licence (PPL) — aeroplane and helicopter, the commercial pilot licence (CPL) — aeroplane and helicopter, the air transport pilot licence (ATPL) — aeroplane and helicopter, the flight engineer licence, the aircraft maintenance engineer licence and the air traffic controller licence. Licences are not issued for glider pilot, free balloon pilot, flight navigator, flight operations officer and aeronautical station operator.

3.4.1.10 The activity of personnel licensing in Oman is restricted to the issuance of licences on the basis of foreign licences and through the validation of licences issued by other Contracting States. Paragraph 61.2.1.2 of CAR 61 specifies that applicants should demonstrate, in a manner determined by the DGCAM, the required knowledge and skill. However, the DGCAM has not established how this is to be demonstrated and has not specified the knowledge and skill level to be attained. In addition, there is no procedure in place for ascertaining the authenticity of the foreign licence presented.

3.4.1.11 The examination required for the issuance of licences on the basis of foreign licences is conducted largely by air operator designated examiners. The DGCAM has not established procedures for the designation of a company examiner or for the effective control and supervision of the examination process. CAN 4-01 of April 1998 prescribes the standards, policies, procedures and guidelines concerning flight test designated examiners. The life expectancy of a questionnaire or question is not specified and many have not been revised in several years.

3.4.1.12 The DGCAM has designated, in Oman and abroad, more than fifteen physicians to perform medical checks on licence holders and applicants. However, there is no formal criteria established for such a designation and no system has been established for providing ongoing supervision of designated medical examiners. Moreover, the circumstances under which a medical examination may be deferred and the period of deferment have not been specified.

3.4.1.13 The licences issued by Oman are primarily the continuing type. The validity of the licence is determined by, and limited to, the validity of type ratings in the accompanying test and medical certificate. All licences are currently reissued on a five-year timescale.

3.4.1.14 The PEL Section maintains a personnel file for each applicant and licence holder that contains all correspondence, applications, assessments, examination results and other licensing documentation. Access to those records is limited to the PEL staff, and all documents are secured in locked archives.

3.4.1.15 The DGCAM has promulgated CAR 141 and CAR 147, which contain requirements for certification and supervision respectively, for pilot schools and aviation maintenance technician schools. The Gulf Air Flight Attendant Centre in Bahrain offers *ab initio* training for the issuance of the Omani flight attendant licence and associated cabin training. However, there are no provisions or criteria for the

certification of such aviation schools. Furthermore, the approval and supervision of specific training courses, other than AME courses, have not been established by the DGCAM.

### 3.4.2 **Corrective action proposed/implemented by Oman**

3.4.2.1 *In order to ensure the proper implementation of all the provisions of Annex 1, the DGCAM will review and amend the civil aviation regulations as necessary before July 2003. Foreign regulations used as the basis for promulgation of the national regulations will be evaluated to ensure their consistency with existing regulations. Any residual differences which may exist will be notified to ICAO at that time.*

3.4.2.2 *The DGCAM indicated that it will review the licensing process in order to establish the functions and responsibilities of headquarters and the regional PEL sections and will develop a new Flight Safety Office Manual to clearly delineate all necessary functions and responsibilities before September 2002. A new medical board will be created and staffed with appropriately qualified medical staff by May 2002. A system for the appointment and supervision of designated examiners will be established before June 2002.*

3.4.2.3 *The DGCAM will develop a personnel licensing handbook describing all procedures related to licensing before May 2002 and provide appropriate orientation training to concerned personnel before July 2002.*

3.4.2.4 *Before September 2002, the DGCAM will review the licensing regulations and develop the new Flight Safety Office Manual to fully document procedures and requirements for the issuance of an Omani licence on the basis of a foreign licence and for the validation of a foreign licence. Associated training and examination requirements will be established before 30 April 2003. The DGCAM does not intend to publish its procedures for the issuance of State licences based on foreign licences in its AIP because the information is available from Omani operators whose sponsorship is required for the issuance of a licence.*

3.4.2.5 *With respect to the recommendation concerning licensing examinations, the DGCAM has agreed to develop new procedures and amend the designated examiners' manual as necessary to establish clear procedures before December 2002 for the effective control of the examination process. The DGCAM noted that criteria for the designation of examiners is published in CAN 4-01 but clear guidelines will be established in the manual for the delegation of examination activities to these examiners and for developing, conducting and correcting written examinations. The life expectancy of the examination questions will also be specified.*

3.4.2.6 *The DGCAM indicated that it will promulgate requirements for the designation of medical examiners and establish a system for the ongoing supervision of the designated examiners by June 2002. Circumstances in which a medical examination may be deferred and the period of deferment will be provided for in the CARs before December 2003.*

3.4.2.7 *The DGCAM has taken the necessary action to ensure that State licences conform to the physical specifications of Annex 1, Chapter 5.*

3.4.2.8 *The DGCAM will establish and publish the procedures and requirements to govern the certification and supervision of aviation training schools before April 2003.*

### 3.5 Aircraft operations certification and supervision in Oman

#### 3.5.1 Abstract of findings

3.5.1.1 The *Civil Aviation Law* is the basis for all regulatory requirements in the operations area. In particular, Article 49 establishes the obligation for air operators to obtain approval and to have operations specifications for the AOC. Moreover, Article 50 requires all air commercial air operators to submit their operations and aircraft flight manuals to the DGCAM for review and approval.

3.5.1.2 Pertinent provisions of the *Civil Aviation Law* relating to aircraft operations include:

- Article 51: Flight Crew;
- Article 52: Regulations for Duties, Flight Times and Rest Periods for Crew Members;
- Article 53: Loading Requirements;
- Article 54: Responsibility of the Operator for Control of Flight Operations of his Aircraft;
- Article 55: Unauthorized Use of Flight Instruments and Flight Cabin; and
- Article 57: Powers Regarding Compliance with Operating Specifications and Laws.

3.5.1.3 The main CARs pertaining to aircraft operations certification are:

- CAR 91: *General Operating and Flight Rules*;
- CAR 121: *Commercial Air Transportation (Aeroplanes)*;
- CAR 125: *Certification and Operations: Private Operations of Large Aircraft*;
- CAR 127: *Certification and Operation of Helicopters*; and
- CAR 129: *Operations: Foreign Air Carriers and Foreign Operators of Omani Registered Aircraft*.

3.5.1.4 The CARs do not require operators to establish procedures for not assigning a pilot-in-command if that pilot has not made at least three take-offs and landings within the preceding ninety days. Adequate simulator practice is accepted in lieu of the requirement for the three take-offs and landings.

3.5.1.5 Article 57 of the *Civil Aviation Law* requires operators to develop and submit operating specifications and to outline their type of aircraft, maintenance capability, airline routing and other pertinent information. The main CARs for aircraft operations certification and surveillance were first issued in 1999 and their full implementation is still in progress in many areas of certification and aircraft operations.

3.5.1.6 The DGCAM's Department of Flight Safety is responsible for all aircraft safety oversight and supervision activities for Omani-registered aircraft operating in Oman and abroad. Within the Flight Safety Department, and under a supervisor in charge of flight safety, is the Aviation Operations Section with three flight operations inspectors. The head of this Section reports directly to the Director General of the DGCAM. The three flight operations inspectors are largely contract personnel assigned as full-time consultants and advisors to the DGCAM. These inspectors act as flight operations inspectors and perform surveillance, certification and training functions. However, there are no written terms of reference related to the functions and responsibilities of the department or the specific duties of the assigned inspectors.

3.5.1.7 A review of staffing and training records for flight operations personnel indicated that no initial or recurrent training is given to flight operations inspectors, and there are no requirements to maintain a current training portfolio or a system to maintain training records for each inspector.

3.5.1.8 The DGCAM inspectors, appointed as dangerous goods inspectors, have not received adequate dangerous goods training, and no single person has been assigned as responsible for the transport of dangerous goods by air.

3.5.1.9 There are also other responsibilities assigned to the Aviation Operations Section, such as training and cabin safety surveillance which was still being formulated and had not yet progressed to a satisfactory level.

3.5.1.10 Certification procedures for air operators are established in the Operations and Airworthiness Inspector Handbooks, which require the coordination of both operations and airworthiness inspectors in the initial and continuing certification of operators. AOCs are issued on a continuing basis and associated operations specifications are issued as an independent document, subject to renewals and changes at the request of the operator. With respect to one AOC that was issued, it was observed that the Operations and Airworthiness Sections acted independently in regard to certification, and neither advised the other on the dual-role issue of extended range operations by twin-engined aeroplanes (ETOPS) which exists in the handbooks of both Sections. In addition, no requirements exist for the evaluation of the financial viability and economic status of the operator.

3.5.1.11 A regional office has been established in Bahrain with responsibilities for the supervision and control of Gulf Air's flight operations. A visit to this office revealed that there were no documents related to inspections and supervision of flight operations, as the inspector was only recently assigned as Principal Operations Inspector in Bahrain. There are no procedures or guidelines governing his duties or the scope of inspector duties that need to be performed.

3.5.1.12 Procedures for aircraft operations supervision and surveillance activities are established in the *Operations Inspector Handbook*. The handbook is based on ICAO Doc 8335 and contains several inspection checklists for each type of inspection required. The system established for AOC holders does not include a comprehensive provision for renewal as AOCs are renewed without an in-depth inspection to ascertain continued compliance with the CARs. Surveillance programmes for 2001, starting in April, have been established with limited surveillance undertaken before this time. Supervision and surveillance activities are limited to the annual renewals of aircraft certificates of airworthiness and the renewal of applications from an operator to change its operations specifications.

### 3.5.2 **Corrective action proposed/implemented by Oman**

3.5.2.1 *With respect to the recommendation to improve coordination between the Operations and Airworthiness Sections in the certification and surveillance of operators, the DGCAM indicated that it will initiate weekly meetings between the Sections and will develop and implement coordination procedures for specific approvals beginning July 2001. The DGCAM indicated that the financial evaluation of operators is reviewed annually at the DGCAM budgetary review level with the involvement of the Flight Safety Department, as required.*

3.5.2.2 *In response to the recommendation to establish regulatory requirements delineating the duties of flight operations officers/dispatchers, the DGCAM indicated that the CARs will be appropriately amended before December 2003. Requirements will also be established by this date for the operator to include in the operations manual more detailed duties and responsibilities of the flight operations officers/dispatchers.*

3.5.2.3 *The DGCAM clarified that CAR 121.970 requires an operator to ensure that a pilot-in-command does not operate an aircraft unless that pilot has made at least three take-offs and landings within the preceding ninety days.*

3.5.2.4 *With respect to the recommendation to require GPWS on certain aircraft, the DGCAM indicated that CAR 121.665 (a) fully implements the ICAO requirements. However, as State regulations are somewhat more restrictive, a difference will be filed.*

3.5.2.5 *As regards the transport of dangerous goods by air, the DGCAM will review and amend the CARs as necessary to ensure the implementation of all provisions of Annex 18 before December 2003. In addition, designated inspectors will receive additional training before February 2002, in order to function as dangerous goods specialists.*

## 3.6 **Airworthiness of aircraft in Oman**

### 3.6.1 **Abstract of findings**

3.6.1.1 The *Civil Aviation Law* and CARs provide the basis for the supervision and control of airworthiness activities in Oman. The CARs relating to continuing airworthiness are a combination of U.S. FARs, JARs and UK BCARs. The Director General of the DGCAM has issued several airworthiness CANs to guide and regulate the industry, and the *Airworthiness Inspector Handbook* further supplements these airworthiness requirements.

3.6.1.2 There are no requirements for granting special operations provisions and maintenance approval criteria for operations such as minimum navigation performance specifications (MNPS), required navigation performance (RNP), and CAT I and CAT II landing systems, although Oman's air operators are operating under such conditions. Guidance from the DGCAM is lacking in many key airworthiness areas and also in the area of specialized services for maintenance. A visit to industry revealed that operators conduct their business in the absence of guidance on certification standards in aircraft welding, non-destructive testing and composite material repairs.

3.6.1.3 The Airworthiness Inspection Section is organized under the Flight Safety Department, which reports directly to the Director General of the DGCAM. The airworthiness group includes two inspectors qualified in avionics, two senior airworthiness inspectors fully qualified in aircraft accident investigation, and two apprentice airworthiness inspectors in varying levels of training. One additional inspector is undergoing training in the United States. This staffing level is considered to be inadequate for the level of aviation activity. Both initial and recurrent training for inspectors are not adequately established.

3.6.1.4 The airworthiness oversight activities include certificate of airworthiness (C of A) issuance and renewal, maintenance organization facility approval, surveillance and random ramp checks on aircraft

operating in the State. The Airworthiness Section also performs maintenance engineer licensing interviews and analyses foreign licences to determine their application and whether an Omani AME licence should be issued.

3.6.1.5 The Airworthiness Section has established a limited formal surveillance programme, but it does not cover all aspects of airworthiness in Oman. In practice, airworthiness surveillance is limited to yearly inspections during renewal of the certificate of airworthiness. There is a procedure developed in the *Airworthiness Inspector Handbook* and a checklist for conducting these inspections, but documentation of inspections was scant. The yearly surveillance programme applies to AMOs as well, but due to the limited number of inspectors, surveillance of the principal AMO outside the State is not done on a regular basis. A visit to industry revealed the need for a principal maintenance inspector to be assigned to this AMO to monitor its inspection and engineering activities performed on behalf of the DGCAM.

3.6.1.6 The airworthiness approval requirements for AMOs, primarily covered in CAR 145, are very similar in content to the JAR-145 requirements. There are also several CANs on AMOs. Based on these requirements, the following items were noted: there are no guidelines or procedures for specialized maintenance activities such as welding and non-destructive testing (NDT), and there are no enforcement procedures for AMOs to control subcontracted maintenance work and to submit updated lists of maintenance subcontractors. The principal AMO was not auditing its maintenance subcontractors and suppliers, and serious enforcement action was not taken by the DGCAM to ensure that the AMO complies with CAR 145 requirements.

3.6.1.7 The Airworthiness Section also approves the maintenance schedule and structural integrity programmes of its operators. The Airworthiness Section has a regulatory requirement for commercial air operators to provide maintenance reliability information. However, the Section has not established procedures to maintain ongoing oversight of the maintenance reliability programmes of its commercial air operators. In addition, the maintenance reliability information does not meet ICAO guidance material in regard to the reporting of ETOPS maintenance-related items to the DGCAM within seventy-two hours. The ongoing oversight of these maintenance reliability programmes was largely ineffective.

3.6.1.8 A review of aircraft maintenance files revealed an effective system of archiving historical records. The reviewed aircraft files and records were well-organized and easy to retrieve. However, it was noticed that some important documents were missing from one of the random files chosen. Omani operators do not supply the Airworthiness Section with airworthiness directives, compliance summaries, status on life-controlled components, and a time for programmed inspections. Instead, the Airworthiness Section relies on manuals and documents maintained by the operator. There is no central technical library which contains all of the air operator's maintenance programmes, MELs, structural repair manuals etc., and this greatly limits the effectiveness of the Airworthiness Section to perform effective surveillance and oversight of important maintenance programmes both in and out of Oman.

3.6.1.9 There are no engineering/manufacturing certification activities in Oman.

### 3.6.2 **Corrective action proposed/implemented by Oman**

3.6.2.1 *In order to ensure that airworthiness inspectors have access to appropriate design organization documentation, the DGCAM will acquire any missing documents and update existing manuals*

before August 2002. It will also establish a system to track airworthiness directives issued by States of Design for all aircraft on the Omani register before July 2002. The DGCAM indicated that it has already developed procedures to ensure the transmission of information on faults, malfunctions and defects to the organization responsible for the type design of the aircraft.

3.6.2.2 In response to the recommendation to recruit additional airworthiness inspectors, the DGCAM indicated that two airworthiness inspectors were away on training at the time of the audit and no additional inspectors will be required after their return. Additional specialty training will be arranged for existing inspectors before January 2002, and a specialized training plan will be implemented before 30 April 2002.

3.6.2.3 With regard to specialized maintenance activities, the DGCAM will establish certification and surveillance requirements and procedures for these activities, including aircraft welding and non-destructive testing, before November 2002. An audit plan for specialized maintenance activities will be prepared as of October 2001.

3.6.2.4 Before May 2002, the DGCAM will review and begin to enforce the existing State requirements for oversight of ETOPS operations in the aviation industry. A letter will be sent to ETOPS operators before 31 July 2001, requiring them to report significant incidents and events affecting the ETOPS approval.

3.6.2.5 The DGCAM will review and approve operators' audit plans for maintenance subcontracting beginning October 2001 and will start to enforce the existing regulatory requirements for certificated air operators to audit and inspect all maintenance subcontractors at least once each year.

3.6.2.6 As recommended, the DGCAM will develop requirements and procedures for the issuance of export certificates of airworthiness for aircraft and aeronautical products before July 2002.

3.6.2.7 In order to improve its supervision of maintenance reliability programmes, the DGCAM indicated that before 31 December 2001, it will establish procedures as necessary and have a DGCAM representative attend all air operator reliability meetings as an observer.

3.6.2.8 Regarding the approval of special operating provisions for air operators, the DGCAM will establish airworthiness and operations approval procedures for RVSM, MNPS, RNP, and CAT II and III before July 2002. A CAN will be developed to inform the aviation industry of the new requirements before 31 May 2003. To ensure coordination between the Operations and the Airworthiness Sections for the issuance of special operating provisions, weekly meetings will be initiated between the Sections beginning May 2001 and the various approval forms will be amended before August 2002 to allow for input from both Sections.

3.6.2.9 With regard to the recommendation concerning air operator maintenance control manuals, the DGCAM indicated that the CARs (CAR 121.905, 121.900, 121.890, 121.895, 121.175, 145.50, 145.55, 145.60 and 145.70) fully conform to ICAO Standards and that all operators are required to submit a manual (CAR 121.905).

3.6.2.10 *In order to ensure that operators are provided with information concerning a least risk bomb location, the DGCAM will request this information from aircraft manufacturers and require operators to include it in the AFM before April 2002.*

#### 4. **COMMENTS**

As indicated above, Oman submitted an action plan on 19 June 2001, addressing all the findings and recommendations that were forwarded, including comments and feedback on the interim report sent on 5 June 2001. Oman is encouraged to keep ICAO regularly informed with regard to the implementation of the proposed action plan and the progress made in accordance with the schedule established.

#### 5. **STATUS OF IMPLEMENTATION AND DIFFERENCES FROM THE ICAO SARPS**

Differences identified during the audit are found in Appendices A and B to this summary report and differences vis-à-vis Standards will be included in the relevant Annex Supplement in line with Article 17 of the MOU signed between Oman and ICAO. Although Oman was provided with a pre-audit questionnaire to assist it in identifying differences between its national regulations and ICAO SARPs and/or SARPs not implemented, a list of such differences was not submitted to the audit team. As such, the list of differences may not be exhaustive, and Oman is urged to conduct a thorough review of its national legislation and regulations and to notify ICAO of any further differences as required under Article 38 of the Chicago Convention.

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## APPENDIX A

### STATUS OF IMPLEMENTATION AND LIST OF DIFFERENCES FROM THE ICAO STANDARDS

#### (ANNEX 1 — PERSONNEL LICENSING)

<b>ICAO Standard reference</b>	<b>Oman's regulation reference</b>	<b>Differences between the national regulations of Oman and ICAO Standards</b>
1.2.5.2.3		Not implemented.
4.2	CAR 63, CAR 66 and CAN 4-02	Medical fitness is required for the aircraft maintenance engineer (AME). These regulations and notices specify requirements for the issuance of the AME licence. CAR 63 adopts Annex 1 provisions and CAR 66 is developed on the basis of JAR 66.
Chapter 5		Not implemented.

**STATUS OF IMPLEMENTATION AND LIST OF DIFFERENCES  
FROM THE ICAO STANDARDS**

**(ANNEX 6 — OPERATION OF AIRCRAFT)**

**(PART I — International Commercial Air Transport — Aeroplanes)**

<b>ICAO Standard reference</b>	<b>Oman's regulation reference</b>	<b>Differences between the national regulations of Oman and ICAO Standards</b>
Chapter 6, 6.13	CAR 121	No requirement for all aircraft to comply with noise certification Standards and to carry the certificate on board the aircraft. Not fully implemented.
Chapter 8, 8.4	CAR 145 and CAR 121	DGCAM has not ensured that operators have complied with specifications outlined in mandatory continuing airworthiness information, and there is no system for tracking this action on the part of air operators. Not fully implemented.

**STATUS OF IMPLEMENTATION AND LIST OF DIFFERENCES  
FROM THE ICAO STANDARDS**

**(ANNEX 8 — AIRWORTHINESS OF AIRCRAFT)**

<b>ICAO Standard reference</b>	<b>Oman's regulation reference</b>	<b>Differences between the national regulations of Oman and ICAO Standards</b>
Part II, 4.2.4	CAR 121	Continuing airworthiness information relating to aircraft experience concerning significant faults, defects and malfunctions, etc., is not being sent to the type certificate holders. Not fully implemented.
Part III, 9.3.5	CAR 121	There is no requirement for operators to identify a least risk bomb location in the aircraft flight manual. Not implemented.

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