



GOVERNMENT OF INDIA  
CIVIL AVIATION DEPARTMENT  
DIRECTOR GENERAL OF CIVIL AVIATION

**AAC No. 5 of 2001**  
Revision 1, Dated 3<sup>rd</sup> January 2018

# **AIRWORTHINESS ADVISORY CIRCULAR**

**SUBJECT: ENGINEERING STATISTICS REPORTS**

## **1. INTRODUCTION**

1.1. Civil Aviation Requirements (Section 2 – Airworthiness) Series “C” Part I, lays down that all operators should prepare a monthly report in respect of fleet performance and engineering statistics (ESR) to determine the reliability of aircraft systems and components and submit at specified intervals as mentioned below to DGCA.

- Scheduled Operator - monthly;
- Other than scheduled Operator - Quarterly.

## **2. PURPOSE**

2.1 The purpose of this requirement is to analyze the statistical data, observe the performance of the aircraft and its systems; identify any deficiency in the basic design in a component or in the layout of a system or in the maintenance practices followed by the operator. If required, based on the observations/ findings, the operator is expected to take necessary steps to make good the deficiencies so that the reliability of the aircraft systems and components is satisfactory and an acceptable level of operational reliability and safety has been achieved.

2.2 This Advisory Circular details the type of information, method of presentation and the frequency at which each operator is required to submit the fleet performance and Engineering Statistical Report (ESR). To achieve uniformity and standardization in the manner of presentation of the monthly ESR with necessary data, a specimen/ sample monthly report for a scheduled operator, non-scheduled operator and private operator is enclosed.

## **3. FORMAT OF ESR**

- Appendix I gives the format for scheduled operator
- Appendix II gives the format for non-scheduled operator
- Appendix III gives the format for private operator

#### 4. CONTENTS OF REPORT

4.1. The ESR may be divided into three parts. Each part will contain the following minimum data according to the size and type of fleet:

Part 1- This part is general and will contain a brief introduction to the ESR of the operator, distribution list, and glossary of terms/ definitions used in the report as applicable to individual operator.

Part 2- This part will include the entire fleet registration details for the period under review.

Part 3- This part may be divided into number of sections according to the type of aircraft and each section will contain aircraft operating summary for the particular type of aircraft, summary of mechanical delays (15 minutes and above) ATA chapter wise, cancellation / diversions of flight, details of engine premature removals, engine IFSD , premature removal of APU , summary of system reliability ATA chapter wise, summary of system performance, summary of unscheduled component removal, details of CVR/FDR removal, release of aircraft under MEL, auto land system, ETOPS/ EDTO reliability etc.

4.2. In addition to the numerical data, a Bar Chart/ graph corresponding to each type of aircraft fleet on the following will also be furnished in the ESR:-

- a) Average daily utilization of aircraft- This bar chart will be a rolling one, by which it can compared the utilization of the type of aircraft fleet for example, the chart for the month of June will give the data from January to June;
- b) Hours/ Cycles logged by the type of aircraft- this bar chart will be prepared as per aircraft type and registration wise;
- c) Engineering defects, Aircraft registration wise;
- d) Engineering defects ATA system wise;
- e) The system reliability-This will be a linear graph and there will be individual graph for each ATA Chapter.

4.3. In addition to the above, it is desired that wherever possible, data should be provided in the form of bar chart and in rolling form. For example the Statistical Report for the month of May 2001 should not only give data in the form of bar chart for that particular month, but the information should be available for previous months commencing from January 2001 in the same bar chart. This will help in analyzing the trend at a glance instead of referring to previous month reports and will help further analysis

**5. PROCEDURES OF SUBMISSION OF ENGINEERING STATISTICAL REPORT**

- 5.1. The operators/ AMOs are required to prepare the engineering statistics report at an interval mentioned above and evaluate it for any shortcomings that requires immediate corrective action to be taken to arrest the same. The copy of the ESR may be submitted along with details of shortcomings/deficiencies, if any and corrective action taken to made good the deficiencies, regularly to the concerned Regional/ Sub-Regional Airworthiness Office of the DGCA and DGCA Hqrs., by 30<sup>th</sup> day of the following month.

Sd/-  
(K. P. Srivastava)  
Dy. Director General of Civil Aviation  
For Director General of Civil Aviation

COVER PAGE

NAME OF ORGANISATION WITH LOGO

ENGINEERING STATISTICS REPORT  
( FOR THE MONTH OF ----- )

ISSUED BY :

## DISTRIBUTION LIST

### EXTERNAL

1. Director of Airworthiness,  
Office of the Director General of Civil Aviation,  
Technical Centre, Opp. Safdarjung Airport,  
New Delhi- 110 003.
2. Regional/ Sub-regional Airworthiness Office where the aircraft is based.
3. Manufacturers of aircraft/ aircraft engines/ components/ equipments.

### INTERNAL

- 1.
- 2.
- 3.

**Name of the organisation  
Engineering Statistics Report**



# PART - 1

**SAMPLE**

## GLOSSARY/ DEFINITION OF TERMS

1. AIRCRAFT IN FLEET: Number of aircraft entered in the Air Operator Permit.

2. AIRCRAFT IN SERVICE - No. of Aircraft days flown ÷ No. of days in the month.
3. AVERAGE HOURS/ FLIGHT – Total flying hrs÷ Total landings (including touch and go)
4. ALERT VALUE - Alert value means maximum deviation from the normal operating limit but within the allowable operating range, which will not cause malfunction to an extent where aircraft safety is in jeopardy.
5. Block Hours - The total time from the moment the aircraft first moves from the loading point until it stops at the unloading point.

6. DAILY UTILISATION PER AIRCRAFT- FLEET – 
$$\frac{\text{Total Flying Hours in the month}}{\text{No. of aircraft in Fleet} \times \text{No. of days in the month}}$$

5. DAILY UTILISATION PER AIRCRAFT-SERVICE – 
$$\frac{\text{Total flying hours in the month}}{\text{No. of aircraft in service fleet} \times \text{No. of days in the month}}$$

7. DESPATCH RELIABILITY- 
$$\frac{\text{Total No. of flights} - \text{Total No. of delays}}{\text{Total No. of flights}} \times 100$$

8. DELAY RATE - 
$$\frac{\text{No. of Technical delays} \times 100}{\text{No. of actual revenue take-offs}}$$

9. ENGINE HOURS (CYCLES) – Total flying hours X Number of engines per aircraft.

10. FLIGHT HOURS - Time between Take-off and Touch down.

11. MAJOR DEFECTS - Major defect means a defect of such nature that reduces the safety of the aircraft or its occupants and includes defects discovered as a result of the occurrence of any emergency or in the course of normal operation of maintenance [Refer CAR (Sec-2) Series 'C' Part-I].

12. MTBUR - Mean Time Between Unscheduled Removals.

13. MEL- Minimum Equipment List.



14. PRECAUTIONARY LANDING - Precautionary landing is defined as those landings effected by the flying crew purely as a precautionary measures to prevent a hazardous situation from developing.
15. PERFORMANCE NUMBER - Number of flight defect per 1000 flying hours.
16. TECHNICAL DELAYS – Interruption to a scheduled departure due to an aircraft/ engine system or component malfunction.
17. TECHNICAL INCIDENT – Includes all block turn-backs, engine failures, fire warnings (real and false), bird strikes/ ingestion, IFSD, lightning strikes and diversions/ overflights. For ETOPS flights, thrust reductions due to abnormal causes are also included.
18. GROUND INCIDENT - Ground incidents broadly cover collision with other aircraft or with vehicle or with standing obstacles; chute deployment, damage/ injury due jet blasts, fire incidents and injury to passengers due ground equipment. All incidents during maintenance of aircraft are also to be termed as ground incidents.
19. TBO/ COSL - Time Between Overhaul/ Component Operating & Storage Limits.
20. TBC- Time Between Check
21. TSC- Time Since Check
22. TSO - Time Since Overhaul
23. TSN- Time Since New.
24. TSLSV- Time Since Last Shop Visit.

*PART - 2*

**SAMPLE**

**TYPE WISE AIRCRAFT REGISTRATION DETAILS**

For the month of \_\_\_\_\_ 2001

SL.NO.	TYPE OF AIRCRAFT	TOTAL NO. OF AIRCRAFT	REGISTRATION MARKING
1.	Boeing 747-200	4	VT-XXX
			VT-XXY
			VT-XXZ
			VT-XYX
2.	Boeing 747-400	3	VT-PQR
			VT-QRP
			VT-PPQ
3.	Airbus 300-B4	4	VT-ESR
			VT-EQS
4.	Airbus 320-231	4	VT-EPA
			VT-EPB
			VT-EPC
			VT-EPD
5.	Airbus 310-300	4	VT-EVA
			VT-EVB
			VT-EVC
			VT-EVD

PART - 3

**SAMPLE**

*SECTION - I*

BOEING 747-200 AIRCRAFT

**BOEING 747-200 AIRCRAFT OPERATIONAL REVIEW FOR THE YEAR 2001**

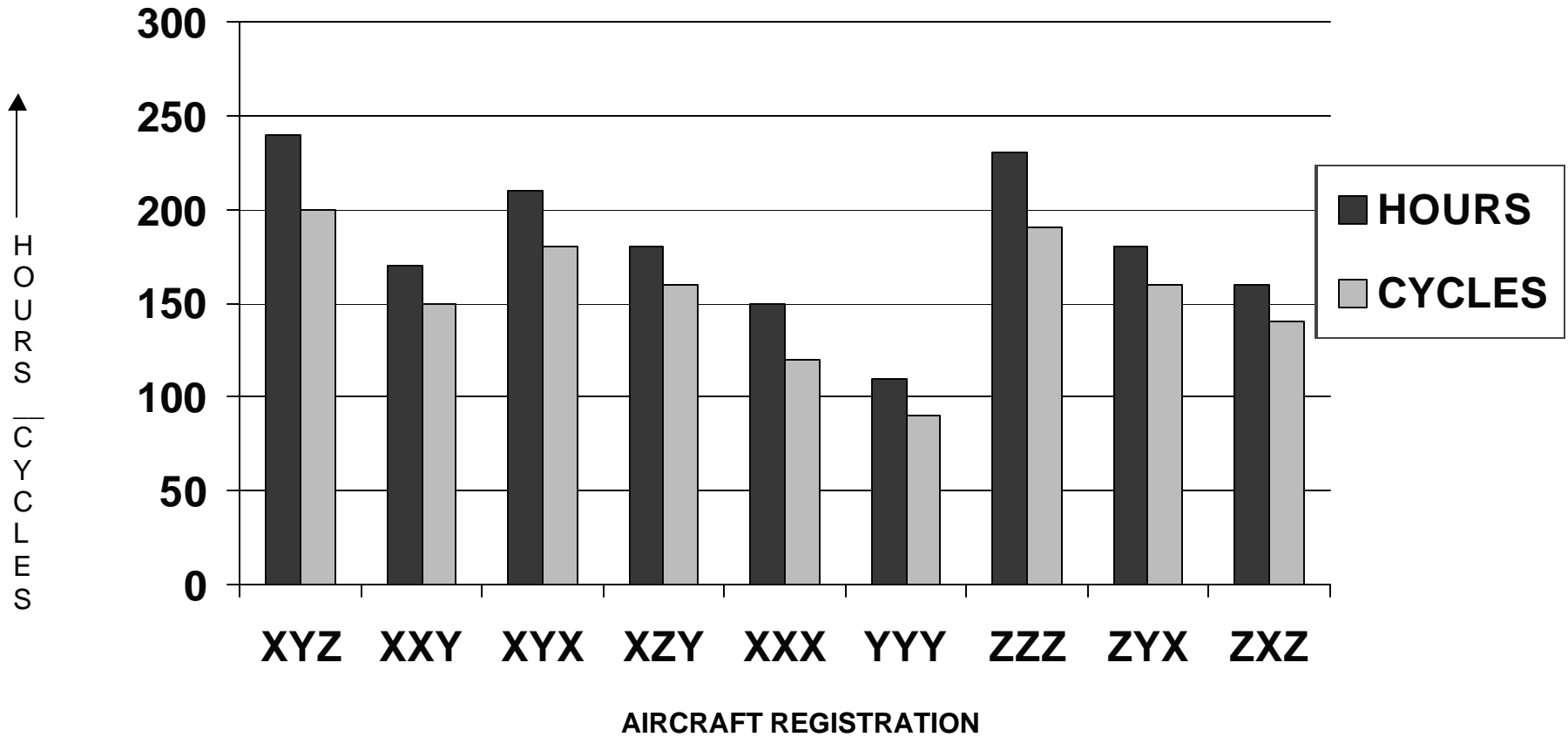
	2000	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
AIRCRAFT IN FLEET													
AIRCRAFT IN SERVICE													
TOTAL HOURS FLOWN -AIR													
TOTAL HOURS FLOWN-BLOCK													
TOTAL FLYING HOURS (REVENUE)													
TOTAL BLOCK HOURS (REVENUE)													
TOTAL FLYING HOURS (AIR) (NON REVENUE)													
TOTAL BLOCK HOURS (NON REVENUE)													
TOTAL NUMBER OF LANDINGS													
TOTAL NUMBER OF REVENUE LANDINGS													
DAILY UTILISATION (FLEET)													
TOTAL DEPARTURES													
TOTAL NUMBER OF INCIDENT													
TECHNICAL DELAYS(>15 MIN)													
TECHNICAL DESPATCH % ( WITHIN 15 MINS)													
TOTAL No.OF BIRD STRIKES													
NUMBER OF MAJOR DEFECT													

**SAMPLE**

Note: Similar data should be furnished for each type of aircraft.

**BOEING 747-200 AIRCRAFT**

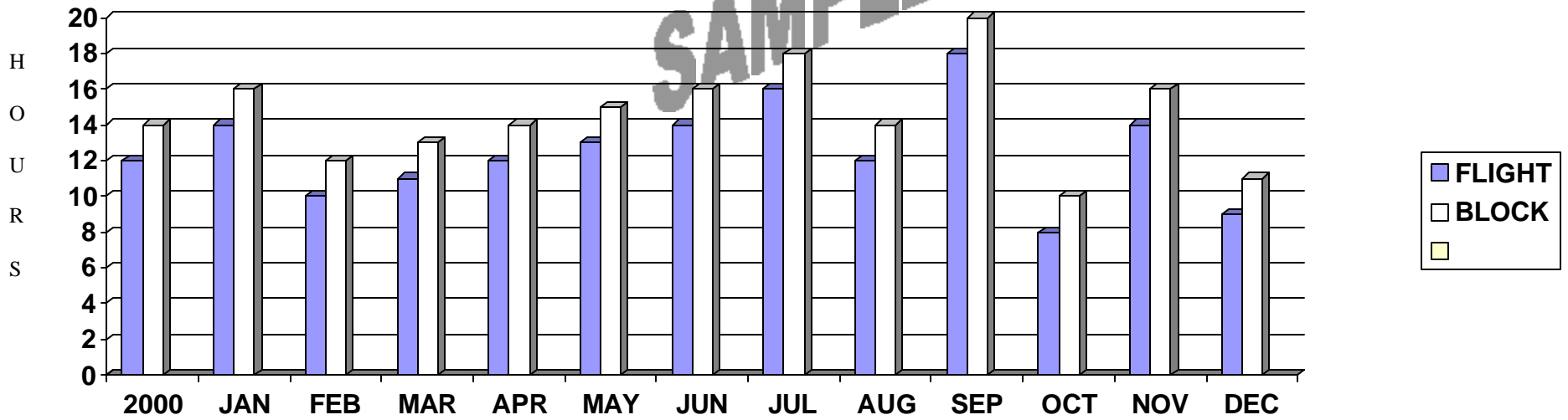
**HOURS/ CYCLES LOGGED AIRCRAFT WISE  
FOR THE MONTH OF \_\_\_\_\_ 2001**



Note: Similar BAR CHART should be furnished for each type of aircraft.

**AVERAGE DAILY UTILISATION OF BOEING 747-200 FLEET**

FOR THE MONTH OF \_\_\_\_\_ 2001



**NOTE: (i) Similar Bar Chart may be furnished for each type of aircraft.**

**(ii) Rolling chart to be provided for the previous months also starting from January onwards.**



**BOEING 747-200 AIR TURN BACKS/ DIVERSIONS AND OVERFLIGHTS DUE TECHNICAL  
FOR THE MONTH OF \_\_\_\_\_ 2001**

FLIGHT No.	AIRCRAFT REGN. No.	STATION	DATE	DEFECT	REASON	RECTIFICATION
<p><b>SAMPLE</b></p>						

Note: Similar data to be provided for each type of aircraft.

**BOEING 747-200 OPERATIONAL REVIEW - 2001  
FOR THE MONTH OF \_\_\_\_\_ 2001**

ENGINE TYPE:	2000	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Engines owned													
Engine hours (Time in Air)													
Engine cycles													
Scheduled Engine Removals													
Unscheduled Engine removals													
Engine hrs per premature removal (MTBUR)													
Unscheduled removals per 1000 engine hrs.													
Engine in-flight shut downs													
In flight shut downs per 1000 engine hrs													

**SAMPLE**

APU TYPE:	2000	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
APUs owned													
APU hours													
Premature removals													
Premature removals per 1000 APU hrs.													
Scheduled removals per 1000 APU hrs.													

Note: Similar data to be provided for each type of engine/ APU in the fleet.

**P & W JT 9D ENGINE PREMATURE REMOVAL DETAILS**

ENG S/N	DATE & LOCATION	A/C & POSITION	TSLSV	CAUSE OF REMOVAL
<b>SAMPLE</b>				

Note: Similar data to be provided for each type of engine in the fleet.

**P & W JT 9D ENGINE INFLIGHT SHUTDOWN DETAILS**

FOR THE MONTH OF \_\_\_\_\_ 2001

FLIGHT No.	A/C & POSITION	STATION	DATE	REASON	RECTIFICATION
<b>SAMPLE</b>					

Note: Similar data to be provided for each type of engine in the fleet.

**APU PREMATURE REMOVAL DETAILS**

FOR THE MONTH OF \_\_\_\_\_ 2001

APU S/N	DATE & LOCATION	A/C & POSITION	TSLSV	CAUSE OF REMOVAL	RECTIFICATION
<b>SAMPLE</b>					

Note: Similar data to be provided for each type of APU in the fleet.

## CALCULATION METHOD FOR SYSTEM ALERT VALUE

1. To calculate system Alert Value for any forthcoming year defect rates for previous two years are to be considered.
2. The two year period (i.e. 24 months) is divided in to eight equal sub-periods (i.e. N=8) and defect rate for respective sub-period is calculated by following formula.

$$\text{Defect Rate} = \frac{\text{Number of defects X 1000}}{\text{Total Take-off for the respective sub-period}}$$

3. The total of defect rate for the previous two years is denoted by  $\Sigma R$ .
4. Square of defect rate for respective sub-periods is calculated and sum of the same is denoted by  $\Sigma R^2$ .
5. Mean defect rate for the said period (i.e. 2years) is calculated by following formula and denoted by  $\bar{2}$

$$\bar{2} = \frac{\text{Sum of defect rate '}\Sigma R\text{'}}{\text{No. of sub-periods 'N'}}$$

6. Standard Deviation (S.D.) is calculated by following formula:

$$\text{S.D.} = \sigma = \sqrt{\frac{\Sigma R^2 - \frac{(\Sigma R)^2}{N}}{N - 1}} \quad \text{i.e. S.D.} = \sqrt{\frac{\text{Sum of square of defect rate} - \frac{(\text{Sum of defect rate})^2}{\text{No. of sub-period}}}{\text{No. of sub-period} - 1}}$$

7. Alert value is calculated by adding mean of defect rate ( $\bar{2}$ ) and two times standard deviation i.e. Alert Value =  $\bar{2} + 2\sigma$

## BOEING 747-200 AIRCRAFT SYSTEM PERFORMANCE REPORT

ATA NO.	SYSTEM	NO. OF DEFECTS IN THE MONTH UNDER REVIEW	PERFORMANCE NUMBER		
			THREE MONTHS CUMULATIVE	AVERAGE OF THREE MONTHS CUMULATIVE OVER LAST 12 MONTHS	ALERT VALUE
21	AIRCONDITIONING & PRESSURISATION	<div style="position: relative; height: 100px;"> <span style="font-size: 4em; opacity: 0.5; transform: rotate(-15deg); display: inline-block;">SAMPLE</span> </div> (APRIL 2000 – APRIL 2001)		(MAY'2000 – APR'2001)	
22	AUTO PILOT				
23	COMMUNICATIONS				
.....	.....				
.....	.....				
.....	.....				
<b>SYSTEMS TOTAL =</b>					

Note: Similar data to be provided for each type of aircraft in the fleet.

**SYSTEM PERFORMANCE EVALUATION**

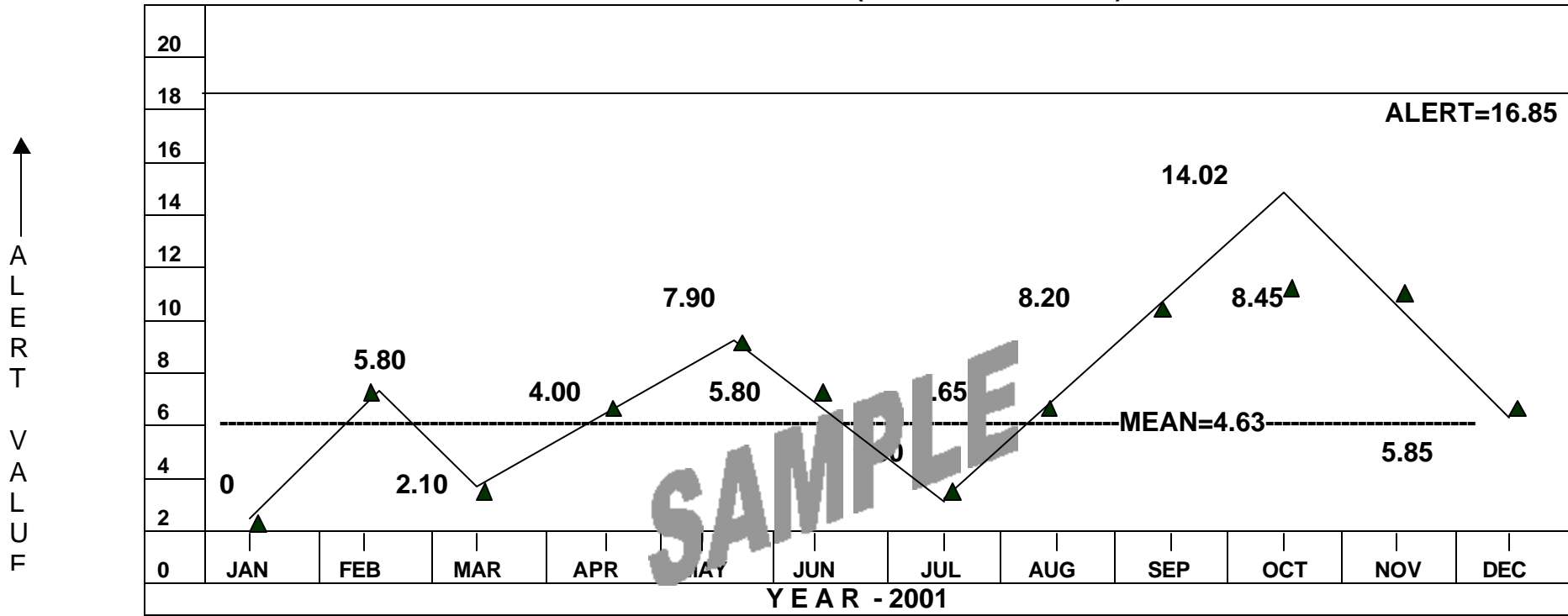
ATA	ESTABLISHED ALERT VALUE	ACTUAL ALERT VALUE	CAUSE OF EXCEEDANCE	CORRECTIVE ACTION TAKEN
21.				
22				
23				
24				
25				
26				
27				
28				
29				
30				
31				
.....				
.....				

**SAMPLE**

Note: Similar data to be provided for each type of aircraft in the fleet.



**ALERT GRAPHS  
ATA CHAPTER 21 (AIR CONDITIONING)**



**NOTE: Similar Alert Graph for each ATA Chapter may be furnished.**

ATA	VT-	VT-	VT-	VT-	VT-	VT-	VT-	VT-	VT-	VT-	SNAGS TOTAL
21											
22											
23											
24											
25											
26											
27											
28											
29											
30											
....											
.....											
.....											
<b>TOTAL SNAG (ALL ATA CHAPTERS)=</b>											

SAMPLE

Note: Similar data to be provided for each type of aircraft in the fleet.

**DETAILS OF MAJOR DEFECTS (BOEING 747-200 AIRCRAFT)**  
 FOR THE MONTH OF \_\_\_\_\_ 2001

S/N	A/C REGN	FLT NO.	SECTOR	DEFECT REPORTED BY	NATURE OF DEFECT	RECTIFICATION ACTION TAKEN
1.						
2.						
3.						

**DETAILS OF GROUND INCIDENTS (BOEING 747-200 AIRCRAFT)**  
FOR THE MONTH OF \_\_\_\_\_ 2001

S/N	A/C REGN	DATE & PLACE OF OCCURRENCE	NATURE OF INCIDENT	ACTION TAKEN
1.				
2.				
3.				

NOTE: Similar information will be furnished for each type of aircraft in fleet.

**UNSCHEDULED COMPONENT REMOVAL/ REPLACEMENT-B747-200**  
FOR THE MONTH OF \_\_\_\_\_ 2001

ATA	REGN	DATE REMOVED	DESCRIPTION	PART NO.	SL. NO.	POSITION	TBO/TBC	TSC	TSO	TSN	CHK	REASON FOR REMOVAL
21	VT-XYZ											
21	VT-XXX											
21	VT-ZYX											
22	VT-XXZ											
22	VT-XZY											
23	.....											
23	.....											
24	.....											

SAMPLE

**SUMMARY OF UNSCHEDULED COMPONENT REMOVAL / REPLACEMENT -B747-200**  
FOR THE MONTH OF \_\_\_\_\_ 2001

ATA	VT-XXX	VT-XYX	VT-XXY	VT-YYY	VT-YXY	VT-ZZZ	VT-XYZ	TOTAL
21	3	1	4	5	3	1	NIL	17
22	NIL	1	2	NIL	1	NIL	3	7
23	4	1	NIL	5	3	2	NIL	15
24	6	5	4	3	3	4	5	30
25	.....	.....	.....	.....	.....	.....	.....	.....
26	.....	.....	.....	.....	.....	.....	.....	.....
27	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....
<b>TOTAL NUMBER OF COMPONENTS REMOVED ( ATA TOTAL)=</b>								<b>110</b>

**DETAILS OF COCKPIT VOICE RECORDER REMOVALS-B747-200**  
FOR THE MONTH OF \_\_\_\_\_ 2001

S/N	A/C REGN	CVR S/N	DATE OF FLIGHT	FLT NO.	SECTOR	REASON FOR REMOVAL	REMARKS
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							

**DETAILS OF FLIGHT DATA RECORDER REMOVALS-B747-200**  
 FOR THE MONTH OF \_\_\_\_\_ 2001

S/N	A/C REGN	FDR S/N	DATE OF FLIGHT	FLT NO.	SECTOR	REASON FOR REMOVAL	REMARKS
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							

Note: CVR/ FDR details will include routine as well as unscheduled removal.

**RELEASE OF AIRCRAFT UNDER MEL-B747-200**  
 FOR THE MONTH OF \_\_\_\_\_ 2001

S/N	INVOKE DETAILS	A/C	SECTOR	ATA	RECTIFICATION ACTION	REVOKE DETAILS
-----	----------------	-----	--------	-----	----------------------	----------------

	DATE	TIME	REGN			DATE	TIME
1.					21		
2.					21		
3.					21		
4.					21		
5.					22		
6.					22		
7.					22		
8.					23		
9.					23		
10.					23		
11.					23		
12.					24		
13.					24		
14.					24		
15.					24		
16.					24		
17.					24		
18.					25		
19.					25		
20.					26		
21.					26		
22.					27		
23.					27		
24.					27		
25.					27		
26.					28		

SAMPLE

**AUTO LAND SYSTEM (CAT-II) RELIABILITY-B747-200**  
 FOR THE MONTH OF \_\_\_\_\_ 2001

S/N	A/C REGN	NO.OF CAT-II LANDINGS	NO.OF SUCCESSFUL CAT-II LANDINGS	REASON FOR UNSUCCESSFUL CAT-II	LAST DATE & AIRPORT OF CAT-II LANDING
-----	----------	-----------------------	----------------------------------	--------------------------------	---------------------------------------

		ATTEMPTED (A)	(B)	LANDINGS. (a), (b) or (c)	
1.					
2.					
3.					
4.					

CAT-II LANDING CONFIDENCE INDEX =

**AUTO LAND SYSTEM (CAT-III) RELIABILITY-B747-200**  
FOR THE MONTH OF \_\_\_\_\_ 2001

S/N	A/C REGN	NO.OF CAT-III LANDINGS ATTEMPTED (A)	NO.OF SUCCESSFUL CAT-III LANDINGS (B)	REASON FOR UNSUCCESSFUL CAT-III LANDINGS. (a),(b) or (c)	LAST DATE & AIRPORT OF CAT-III LANDING
1.					
2.					
3.					
4.					

CAT-III LANDING CONFIDENCE INDEX =

**NOTE:** CAT-II/ III LANDING CONFIDENCE INDEX =  $B / [A - (b+c)] \times 100$

- (a) - Aircraft Equipment
- (b) -Ground Equipment
- (c) -ATC

Part 3/ Section-I / Page 18 of 21

**DETAILS OF APPROVED TWIN ENGINE AEROPLANE FLEET FOR EXTENDED RANGE OPERATIONS**

S/N	TYPE OF AIRCRAFT	AIRCRAFT REGISTRATION	AIRCRAFT SERIAL No.	TYPE OF ENGINE	TYPE OF APU	APPROVED ETOPS RANGE

1.	AIRBUS A320	VT-XXX		IAE V 2500		75 MINUTES
2.	AIRBUS A320	VT-XYX		IAE V 2500		75 MINUTES
3.	AIRBUS A320	VT-YYY		IAE V 2500		75 MINUTES
4.	AIRBUS A320	VT-YXY		IAE V 2500		120 MINUTES
5.	AIRBUS A320	VT-YYX		IAE V 2500		120 MINUTES
6.	AIRBUS A320	VT-YYY		IAE V 2500		120 MINUTES
7.	AIRBUS A310	VT-XYZ		GE CF6-80C2		180 MINUTES
8.	AIRBUS A310	VT-ZZX		GE CF6-80C2		180 MINUTES
9.	AIRBUS A310	VT-XZX		GE CF6-80C2		180 MINUTES
10.	AIRBUS A300	VT-ZYZ		GE CF6-50		120 MINUTES
11.	AIRBUS A300	VT-YYY		GE CF6-50		120 MINUTES
12.	AIRBUS A300	VT-ZZZ		GE CF6-50		120 MINUTES

**DETAILS OF ENGINES INSTALLED ON AEROPLANE USED FOR EXTENDED RANGE OPERATIONS**  
**FOR THE MONTH OF \_\_\_\_\_ 2001**



TYPE OF AIRCRAFT	AIRCRAFT REGN. No.	TYPE OF ENGINE	ENGINE SERIAL No.	HOURS/ CYCLES (TSN)	HRS./CYC. SLSV	No. OF IFSD	IFSD RATE
AIRBUS 320	VT-XYZ	IAE V2500	LH-123456-1 RH-231458-1	3500/ 680 1500/ 110	300/ 50 1500/110	NIL NIL	
AIRBUS 300	VTYYX	GE CF6-50	LH-2345-5 RH-857-5	375/ 64 576/ 10	1200/ 40 1200/ 40	01 NIL	
AIRBUS 310							

**DETAILS OF AEROPLANE ALTITUDE KEEPING ERRORS FOR RVSM**  
**FOR THE MONTH \_\_\_\_\_ 2001**

SI No	Type of A/c	A/C Regn. No.	Flt. No.	Flt. Sector	Date of Flt.	Total Vertical Error (300 Ft)	Altimetry System Error (245 Ft)	Assigned Altitude Deviation (300 Ft)	Actual Cause of Deviation/ Error	Rectification Action Taken
1.	Boeing 747-400	VT-XXX								
2.	Boeing 747-400	VT-XYX								
3.	Boeing 747-400	VT-YYY								
4.	AIRBUS A320	VT-YXY								
5.	AIRBUS A320	VT-YYX								
6.	AIRBUS A320	VT-XYZ								
7.	AIRBUS A310	VT-XYZ								
8.	AIRBUS A310	VT-ZZX								
9.	AIRBUS A310	VT-XZX								
10.	AIRBUS A300	VT-ZYZ								
11.	AIRBUS A300	VT-YYY								
12.	AIRBUS A300	VT-ZZZ								

SAMPLE

COVER PAGE

NAME OF ORGANISATION WITH LOGO

**ENGINEERING STATISTICS REPORT**  
( FOR THE PERIOD OF ----- )

ISSUED BY :

## **DISTRIBUTION LIST**

### **EXTERNAL**

1. Director of Airworthiness,  
Office of the Director General of Civil Aviation,  
Technical Centre, Opp. Safdarjung Airport,  
New Delhi- 110 003.
2. Regional/ Sub-regional Airworthiness Office where the aircraft is based.
3. Manufacturers of aircraft/ aircraft engines/ components/ equipments.

### **INTERNAL**

- 1.
- 2.
- 3.



*PART - 1*

**SAMPLE**

## **GLOSSARY/ DEFINITION OF TERMS**

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5. DAILY UTILISATION PER AIRCRAFT- FLEET – 
$$\frac{\text{Total Flying Hours in the period}}{\text{No. of aircraft in Fleet X No. of days in the period}}$$
6. DAILY UTILISATION PER AIRCRAFT-SERVICE - 
$$\frac{\text{Total flying hours in the period}}{\text{No. of aircraft in service fleet X No. of days in the period}}$$
1. DESPATCH RELIABILITY- 
$$\frac{\text{Total No. of flights} - \text{Total No. of delays}}{\text{Total No. of flights}} \times 100$$
2. DELAY RATE - 
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12. TBC- Time Between Check
13. TSC- Time Since Check
14. TSO - Time Since Overhaul
15. TSN- Time Since New.
16. TSLSV- Time Since Last Shop Visit.



*PART - 2*

**SAMPLE**

**TYPE WISE AIRCRAFT REGISTRATION DETAILS**

For the period of \_\_\_\_\_2001

SL.NO.	TYPE OF AIRCRAFT	TOTAL NO. OF AIRCRAFT	REGISTRATION MARKING
1.	Beech Super King Air B-200	2	VT-XXX
			VT-XXY
2.	Beechcraft 99	3	VT-PQR
			VT-QRP
			VT-PPQ
3.	Dornier DO-228	2	VT-ESR
			VT-EQS
4.	Cessna Citation -II	1	VT-EPA

*PART - 3*

**SAMPLE**

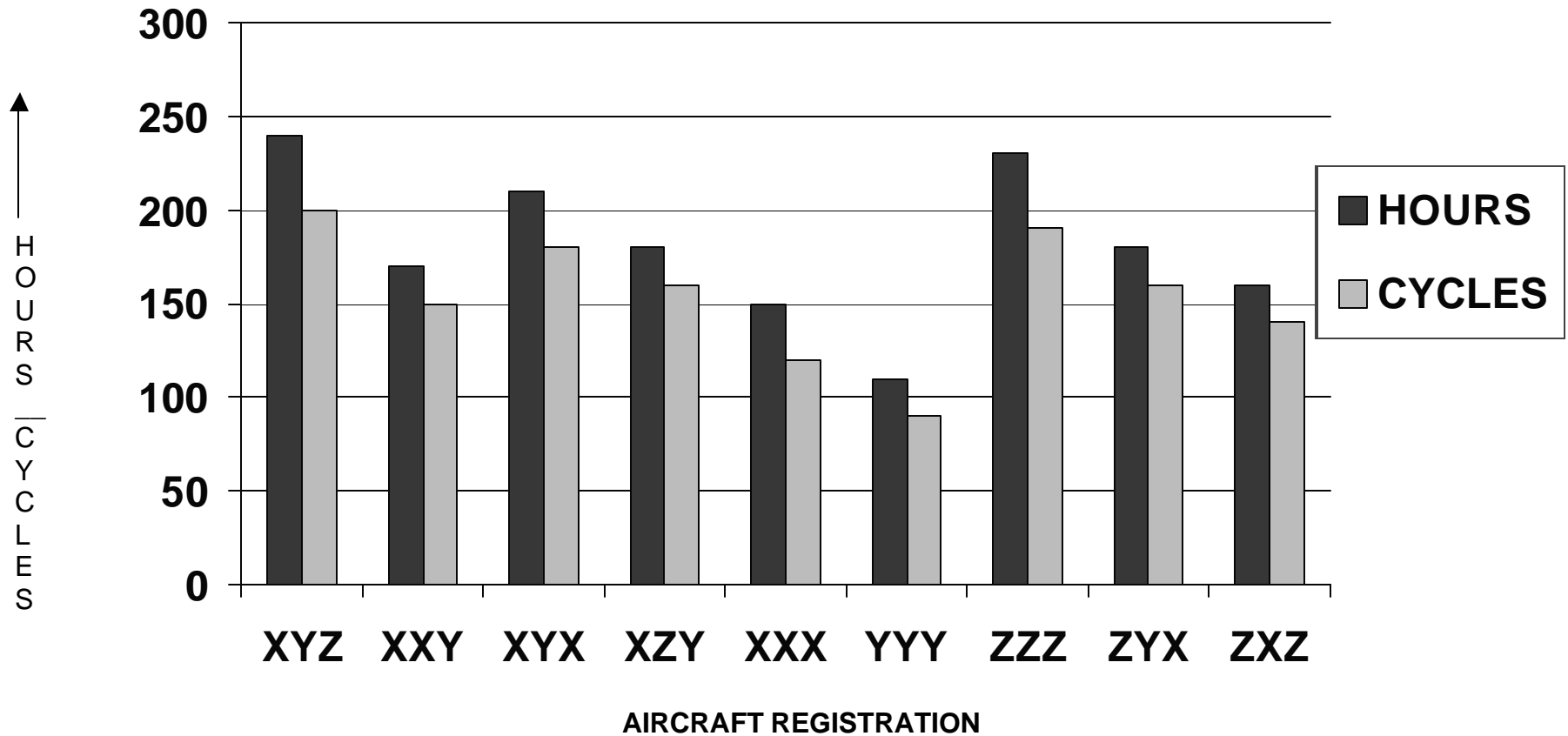
*SECTION - I*  
BEECH SUPER KING AIR B-200 AIRCRAFT

<b>BEECH SUPER KING AIR B-200 AIRCRAFT OPERATIONAL REVIEW FOR THE YEAR 2001</b>					
	2000	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC
AIRCRAFT IN FLEET					
AIRCRAFT IN SERVICE					
TOTAL HOURS FLOWN -AIR					
TOTAL HOURS FLOWN-BLOCK					
TOTAL FLYING HOURS (REVENUE)					
TOTAL BLOCK HOURS (REVENUE)					
TOTAL FLYING HOURS (AIR) (NON REVENUE)					
TOTAL BLOCK HOURS (NON REVENUE)					
TOTAL NUMBER OF LANDINGS					
TOTAL NUMBER OF REVENUE LANDINGS					
DAILY UTILISATION (FLEET)					
TOTAL DEPARTURES					
TOTAL NUMBER OF INCIDENT					
TOTAL No. OF BIRD STRIKES					
NUMBER OF MAJOR DEFECT					

**SAMPLE**

Note: Similar data should be furnished for each type of aircraft

**BEECH SUPER KING AIR B-200 AIRCRAFT  
HOURS/ CYCLES LOGGED AIRCRAFT WISE  
FOR THE PERIOD OF \_\_\_\_\_ 2001**



Note: Similar BAR CHART should be furnished for each type of aircraft

<b>BEECH SUPER KING AIR B-200 OPERATIONAL REVIEW - 2001</b>					
<b>FOR THE PERIOD OF _____ 2001</b>					
<b>ENGINE TYPE:</b>	<b>2000</b>	<b>JAN-MAR</b>	<b>APR-JUN</b>	<b>JUL-SEP</b>	<b>OCT-DEC</b>
Engines owned					
Engine hours (Time in Air)					
Engine cycles					
Scheduled Engine Removals					
Un scheduled Engine removals					
Un scheduled removals per 1000 engine hrs.					
Engine in-flight shut downs					
In flight shut downs per 1000 engine hrs					

SAMPLE

<b>APU TYPE:</b>	<b>2000</b>	<b>JAN-MAR</b>	<b>APR-JUN</b>	<b>JUL-SEP</b>	<b>OCT-DEC</b>
APUs owned					
APU hours					
Premature removals					
Premature removals per 1000 APU hrs.					
Scheduled removals per 1000 APU hrs.					

Note: Similar data to be provided for each type of engine/ APU in the fleet.

P & W PT-6A ENGINE PREMATURE REMOVAL DETAILS				
ENG S/N	DATE & LOCATION	A/C & POSITION	TSLSV	CAUSE OF REMOVAL
<b>SAMPLE</b>				

Note: Similar data to be provided for each type of engine in the fleet.



<b>P &amp; W PT-6A ENGINE INFLIGHT SHUTDOWN DETAILS</b>					
FOR THE PERIOD OF _____ 2001					
<b>FLIGHT No.</b>	<b>A/C &amp; POSITION</b>	<b>STATION</b>	<b>DATE</b>	<b>REASON</b>	<b>RECTIFICATION</b>

Note: Similar data to be provided for each type of engine in the fleet.

<b>APU PREMATURE REMOVAL DETAILS</b>					
FOR THE PERIOD OF _____ 2001					
<b>APU S/N</b>	<b>DATE &amp; LOCATION</b>	<b>A/C &amp; POSITION</b>	<b>TSLSV</b>	<b>CAUSE OF REMOVAL</b>	<b>RECTIFICATION</b>

Note: Similar data to be provided for each type of APU in the fleet.

**ATA CHAPTER WISE BREAK UP OF REPORTED SNAGS (BEECH SKA B-200) FOR THE PERIOD OF 2001**

ATA	VT-	VT-	VT-	VT-	VT-	VT-	VT-	VT-	VT-	VT-	SNAGS TOTAL
21											
22											
23											
24											
25											
26											
27											
28											
29											
30											
....											
.....											
....											
<b>TOTAL SNAG (ALL ATA CHAPTERS)=</b>											

SAMPLE

Note: Similar data to be provided for each type of aircraft in the fleet.

**DETAILS OF MAJOR DEFECTS (BEECH SKA B-200)**

FOR THE PERIOD OF \_\_\_\_\_ 2001

S/N	A/C REGN	FLT NO.	SECTOR	DEFECT REPORTED BY	NATURE OF DEFECT	RECTIFICATION ACTION TAKEN
1.						
2.						
3.						

**DETAILS OF GROUND INCIDENTS (BEECH SKA B-200)**

FOR THE PERIOD OF \_\_\_\_\_ 2001

S/N	A/C REGN	DATE & PLACE OF OCCURRENCE	NATURE OF INCIDENT	ACTION TAKEN
1.				
2.				
3.				

NOTE: Similar information shall be furnished for each type of aircraft in fleet.

**UNSCHEDULED COMPONENT REMOVAL-BEECH SKA B-200**  
FOR THE PERIOD OF \_\_\_\_\_ 2001

ATA	REGN	DATE REMOVED	DESCRIPTION	PART NO.	SL. NO.	POSITION	TBO/TBC	TSC	TSO	TSN	CHK	REASON FOR REMOVAL
21	VT-XYZ											
21	VT-XXX											
21	VT-ZYX											
22	VT-XXZ											
22	VT-XZY											
23	.....											
23	.....											
24	.....											

**SUMMARY OF UNSCHEDULED COMPONENT REMOVAL-BEECH SKA B-200**  
FOR THE PERIOD OF \_\_\_\_\_ 2001

ATA	VT-XXX	VT-XYX	VT-XXY	VT-YYY	VT-YXY	VT-ZZZ	VT-XYZ	TOTAL
21	3	1	4	5	3	1	NIL	17
22	NIL	1	2	NIL	1	NIL	3	7
23	4	1	NIL	5	3	2	NIL	15
24	6	5	4	3	3	4	5	30
25	.....	.....	.....	.....	.....	.....	.....	.....
26	.....	.....	.....	.....	.....	.....	.....	.....
27	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....
<b>TOTAL NUMBER OF COMPONENTS REMOVED/ REPLACED ( ATA TOTAL)=</b>								<b>110</b>

**DETAILS OF COCKPIT VOICE RECORDER REMOVALS**

FOR THE PERIOD OF \_\_\_\_\_ 2001

S/N	A/C REGN	CVR S/N	DATE OF FLIGHT	FLT NO.	SECTOR	REASON FOR REMOVAL	REMARKS
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							

**DETAILS OF FLIGHT DATA RECORDER REMOVALS**

FOR THE PERIOD OF \_\_\_\_\_ 2001

S/N	A/C REGN	FDR S/N	DATE OF FLIGHT	FLT NO.	SECTOR	REASON FOR REMOVAL	REMARKS
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							

Note: CVR/ FDR details will include routine as well as unscheduled removal.

**RELEASE OF AIRCRAFT UNDER MEL-BEECH SKA B-200**  
FOR THE PERIOD OF \_\_\_\_\_ 2001

S/N	INVOKE DETAILS		A/C REGN	SECTOR	ATA	RECTIFICATION ACTION	REVOKE DETAILS	
	DATE	TIME					DATE	TIME
1.					21			
2.					21			
3.					21			
4.					21			
5.					22			
6.					22			
7.					22			
8.					23			
9.					23			
10.					23			
11.					23			
12.					24			
13.					24			
14.					24			
15.					24			
16.					24			
17.					24			
18.					25			
19.					25			
20.					26			
21.					26			
22.					27			
23.					27			
24.					27			
25.					27			
26.					28			

**COVER PAGE**

NAME OF ORGANISATION WITH LOGO

**ENGINEERING STATISTICS REPORT**  
( FOR THE PERIOD OF ----- )

ISSUED BY :

## DISTRIBUTION LIST

### EXTERNAL

1. Director of Airworthiness,  
Office of the Director General of Civil Aviation,  
Technical Centre, Opp. Safdarjung Airport,  
New Delhi- 110 003.
2. Regional/ Sub-regional Airworthiness Office where the aircraft is based.
3. Manufacturers of aircraft/ aircraft engines/ components/ equipments.

### INTERNAL

- 1.
- 2.
- 3.





*PART - 1*

**SAMPLE**

## **GLOSSARY/ DEFINITION OF TERMS**

1. AIRCRAFT IN FLEET: Number of aircraft owned
2. AIRCRAFT IN SERVICE - No. of Aircraft days flown ÷ No. of days in the period.
3. Block Hours - The total time from the moment the aircraft first moves from the loading point until it stops at the unloading point.
4. ENGINE HOURS (CYCLES) – Total flying hours X Number of engines per aircraft.
5. FLIGHT HOURS - Time between Take-off and Touch down.
6. MAJOR DEFECTS - Major defect means a defect of such nature that reduces the safety of the aircraft or its occupants and includes defects discovered as a result of the occurrence of any emergency or in the course of normal operation of maintenance [Refer CAR (Sec-2) Series 'C' Part-I].
7. PRECAUTIONARY LANDING - Precautionary landing is defined as those landings effected by the flying crew purely as a precautionary measures to prevent a hazardous situation from developing.
8. TECHNICAL INCIDENT – Includes all block turn-backs, air turn-backs, fire warnings (real and false), bird strikes/ ingestion, IFSD, lightning strikes and diversions/ over flights. For ETOPS flights, thrust reductions due to abnormal causes are also included.
9. GROUND INCIDENT - Ground incidents broadly cover collision with type aircraft or with vehicle or with standing obstacles; chute deployment, damage/ injury due jet blasts, fire incidents and injury to passengers due ground equipment. All incidents during maintenance of aircraft are also to be termed as ground incidents.
10. TSLSV – Time since last shop visit

*PART - 2*

**SAMPLE**

## TYPE WISE AIRCRAFT REGISTRATION DETAILS

For the period of \_\_\_\_\_2001

SL .N O.	TYPE OF AIRCRAFT	TOTAL NO. OF AIRCRAFT	REGISTRATION MARKING
1.	Beechcraft 99	2	VT-XXX
			VT-XXY
2.	Bell 212 helicopter	3	VT-PQR
			VT-QRP
			VT-PPQ

PART - 3  
**SAMPLE**

*SECTION - I*  
BEECHCRAFT 99 AIRCRAFT

<b>BEECHCRAFT 99 AIRCRAFT OPERATIONAL REVIEW FOR THE YEAR 2001</b>			
	2000	JANUARY-JUNE	JULY-DECEMBER
AIRCRAFT IN FLEET		<b>SAMPLE</b>	
AIRCRAFT IN SERVICE			
TOTAL HOURS FLOWN-BLOCK			
TOTAL NUMBER OF LANDINGS			
TOTAL NUMBER OF INCIDENT			
TOTAL No.OF BIRD STRIKES			
TOTAL No. OF MAJOR DEFECT			
TOTAL No. OF EMERGENCY LANDINGS			
EMERGENCY LANDINGS PER 1000 HOURS			
NUMBER OF NOTIFIABLE ACCIDENTS			
ACCIDENT PER 1000 HOURS			

Note: Similar data should be furnished for type of aircraft.



<p align="center"><b>P&amp;W PT6A-27 ENGINE OPERATIONAL REVIEW - 2001 FOR THE PERIOD OF _____ 2001</b></p>			
<b>ENGINE TYPE: P&amp;W PT6A-27</b>	<b>2000</b>	<b>JANUARY-JUNE</b>	<b>JULY-DECEMBER</b>
Engines owned			
Engine hours			
Engine cycles			
Engine Premature removals			
Premature removals per 1000 engine hours.			
Engine in-flight shut downs (IFSD)			
IFSD per 1000 engine hrs			

**SAMPLE**

P & W PT-6A ENGINE PREMATURE REMOVAL DETAILS				
FOR THE PERIOD OF _____ 2001				
ENG S/N	DATE & LOCATION	A/C & POSITION	TSLSV	CAUSE OF REMOVAL
<b>SAMPLE</b>				

Note: Similar data to be provided for type of engine in the fleet.

P & W PT-6A ENGINE INFLIGHT SHUTDOWN DETAILS					
FOR THE PERIOD OF _____ 2001					
FLIGHT No.	A/C & POSITION	STATION	DATE	REASON	RECTIFICATION
<b>SAMPLE</b>					

Note: Similar data to be provided for each type of engine in the fleet.

**DETAILS OF MAJOR DEFECTS (BEEHCRAFT 99)**

FOR THE PERIOD OF \_\_\_\_\_ 2001

S/N	A/C REGN	SECTOR	DEFECT REPORTED BY	NATURE OF DEFECT	RECTIFICATION ACTION TAKEN
1.					
2.					
3.					

**DETAILS OF GROUND INCIDENTS (BEEHCRAFT 99)**

FOR THE PERIOD OF \_\_\_\_\_ 2001

S/N	A/C REGN	DATE & PLACE OF OCCURRENCE	NATURE OF GROUND INCIDENT	ACTION TAKEN
1.				
2.				
3.				

NOTE: Similar information to be furnished for each type of aircraft in fleet.

**DETAILS OF INCIDENTS (BEECHCRAFT 99)**

FOR THE PERIOD OF \_\_\_\_\_ 2001

S/N	A/C REGN	DATE & PLACE OF OCCURRENCE	NATURE OF INCIDENT	ACTION TAKEN
1.			<b>SAMPLE</b>	
2.				
3.				
4.				
5.				

NOTE: Similar information to be furnished for each type of aircraft in fleet.

**SYSTEM WISE/ATA CHAPTER WISE BREAK UP OF REPORTED DEFECTS (BEECHCRAFT 99) FOR THE PERIOD**  
**OF \_\_\_\_\_ 2001**

<b>ATA</b>	<b>VT-XXX</b>	<b>VT-XXY</b>	<b>ATA DEFECT TOTAL</b>
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
....			
.....			
<b><u>DEFECT TOTAL</u></b>			

Note: Similar data to be provided for each type of aircraft

**DETAILS OF COCKPIT VOICE RECORDER REMOVALS(IF INSTALLED)**

FOR THE PERIOD OF \_\_\_\_\_ 2001

S/N	A/C REGN	CVR S/N	DATE OF FLIGHT	FLT NO.	SECTOR	REASON FOR REMOVAL	REMARKS
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							

**DETAILS OF FLIGHT DATA RECORDER REMOVALS(IF INSTALLED)**

FOR THE PERIOD OF \_\_\_\_\_ 2001

S/N	A/C REGN	FDR S/N	DATE OF FLIGHT	FLT NO.	SECTOR	REASON FOR REMOVAL	REMARKS
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							

Note: CVR/ FDR details will include routine as well as unscheduled removal.