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Department of Civil Aviation

DCAC

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Abstract

This review presents the status of aviation safety in Cyprus, on the basis of data collected with respect to safety occurrences in the year 2019. It is prepared and published in line with Article 13(11) of Regulation (EU) 376/2014.

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Contact Person(s)	Tel.	Unit
Marios Panteli	22404162	Safety Regulation Unit
Nicolaou Giorgos	22404174	National Supervisory Authority
Kalapodas Costas	22404179	Air Transport and Aerodrome Section

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The following table identifies all management authorities who have successively approved the present issue of this document.

AUTHORITY	NAME AND SIGNATURE	SIGNATURE DATE
Director DCAC	*Panayiota Georgiou-Demetriou*	
Approved by	*Marios Panteli,* *Airworthiness Inspector*	
Prepared by	*George Nicolaou,* *NSA Officer*	

EXECUTIVE SUMMARY

The Department of Civil Aviation has established a reporting system to facilitate the collection of details of aviation occurrences that are reportable under Articles 4 and 5 of Regulation (EU) 376/2014. The Department collects, evaluates, processes, analyses and stores these occurrences in a national database. The Department forwards details on accidents and serious incidents to the Cyprus Safety Investigation Authority for further analysis and investigation.

This review presents the status of aviation safety in Cyprus, on the basis of data collected with respect to safety occurrences in the year 2019. It is prepared and published in line with Article 13(11) of Regulation (EU) 376/2014. This review also serves as an input to the Annual Safety Report of 2019 which will be produced in accordance with the provisions of the State Safety Program in force.

A total of 631 reports were submitted to the Department of Civil Aviation in the year 2019. No report was classified as an "accident" and only 4 reports were classified as "serious incidents", a percentage of less than 1%.

Analysis has shown that the occurrence categories with the biggest number of occurrences were:

- NAV: Navigation Error
- OTHR: Other
- ATM: ATM/CNS
- BIRD: Bird strike, and
- SEC: Security

No significant trends exist with reference to the previous year. The different sections in the Department are monitoring the reports as they are received and action is taken when required. Action is also taken when required through the State Safety Programme.

Considering that the air traffic demand of 2019 was higher by 4.5%, it can be concluded that the levels of safety in 2019 were satisfactory and that improvements compared to the previous year were made.

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1. Background

This review has been elaborated in accordance with the provisions of DCAC Procedure "Occurrence Reporting v1.0", dated 31/01/2020 and is prepared and published in line with Regulation (EU) 376/2014, Article 13(11). This review also serves as an input to the Annual Safety Report of 2019 which will be produced in accordance with the provisions of the State Safety Program in force.

2. Reporting period

This review covers the year 2019.

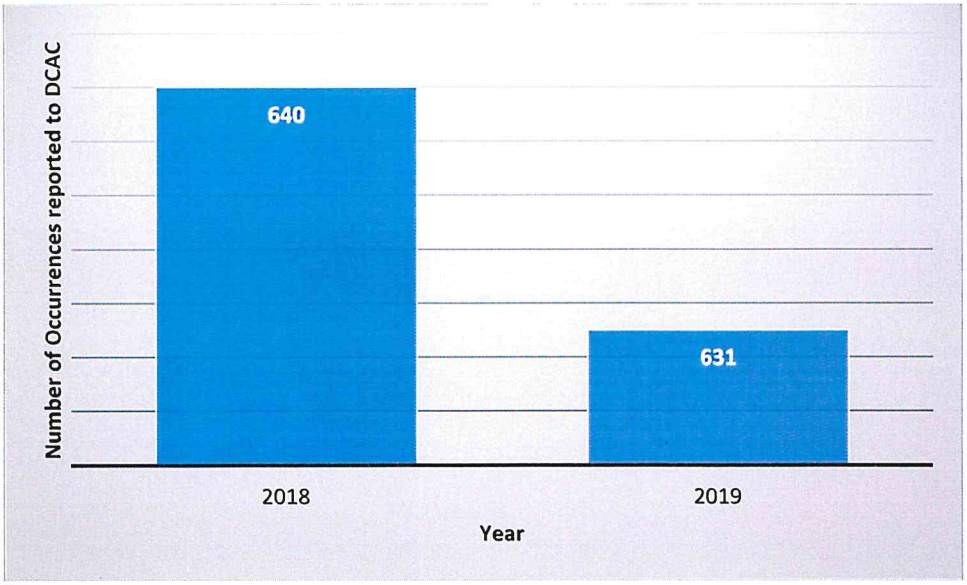
3. Sources of information

The analysis is based on the data contained in the National Database of Safety Occurrences. This is the database maintained at national level, where all occurrences reported to the competent authority are stored. This is done in accordance with Reg. (EU) 376/2014 "on the reporting, analysis and follow-up of occurrences in civil aviation".

It must be noted that, due to the fact that this the first time of issuing this review, the comparison with the previous year (2018) will be done in an ad-hoc manner, using the data kept individually in the various DCAC sections (i.e. NSA, Aerodromes and Airworthiness). This issue will be resolved with the next year's review, when it is expected that both the data of 2019 and 2020 will be available.

4. Key Statistics

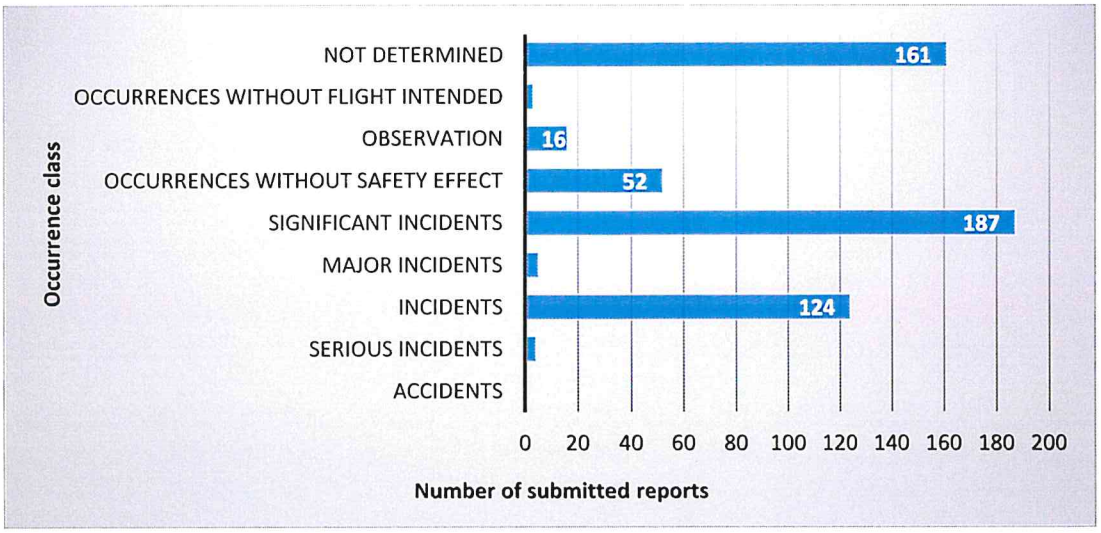
4.1: Number of occurrences reported to the DCAC



2018	2019
640	631

4.2: Number of submitted occurrences in the National Database based on the Occurrence Class

The classification of the 552 occurrences entered in the National database based on their severity is as follows:



Occurrence Class			
Accidents	0	Occurrences without Safety effect	52
Serious Incidents	4	Observation	16
Incidents	124	Occurrences without flight intended	3
Major Incidents	5	Not determined	161
Significant Incidents	187		

No **accidents** have been reported.

Out of four (4) **Serious Incidents** reported:

- One (1) was related to fire/smoke (non-impact) (ECCAIRS code: F-NI)
- Two (2) were related to system/component failure or malfunction [non-powerplant] (ECCAIRS code: SCF-NP)
- One (1) was related to an airprox/ ACAS alert/ loss of separation/ (near) mid-air collisions (ECCAIRS code MAC).

Out of one hundred twenty-four (124) **Incidents** reported:

- Forty-two (42) were related to BIRD: Birdstrike
- Thirty-seven (37) were related to SCF-NP: System/component failure or malfunction (non-powerplant)
- Twenty-five (25) were related to OTHR: Other
- Thirteen (13) were related to NAV: Navigation error
- Eleven (11) were related to ATM: ATM/CNS
- Five (5) were related to ADRM: Aerodrome
- Five (5) were related to WILD: collision wildlife
- Four (4) were related to SEC: Security

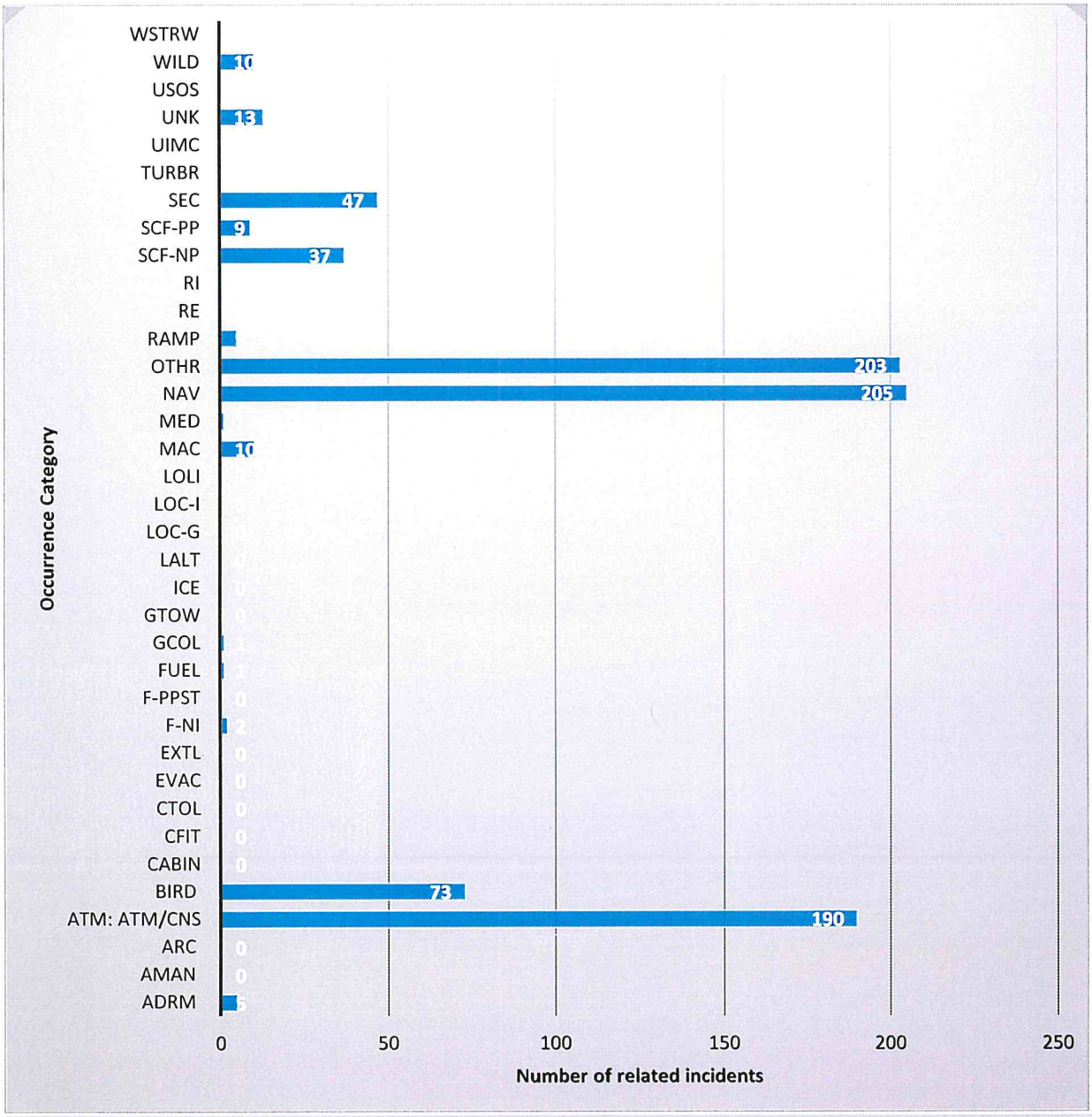
Five (5) **Major Incidents** reported were related with MAC: Airprox/ ACAS alert/ loss of separation/ (near) midair collisions (SMI) combined with NAV: Navigation error.

Out of one hundred eighty-seven (187) **Significant Incidents** reported:

- One hundred seventy-one (171) were related to category NAV (Navigation error) (airspace penetration/infringements)
- Sixteen (16) were mostly related with coordination issues with other ATC units.

It must be noted that 161 reports have been recorded in the Database with occurrence class as "Not Determined". In this respect, it is not possible to analyse further the reasons behind these incidents. The Competent Authority must take steps to limit the use of "Not Determined" or "Unknown" by the organisations submitting the reports.

4.3 Number of submitted occurrences reports based on the Occurrence Category



Occurrence Category

ADRM	5	CFIT	0	FUEL	1	LOC-I	0	RAMP	5	TURB	0
AMAN	0	CTOL	0	GCOL	1	LOLI	0	RE	0	UIMC	0
ARC	0	EVAC	0	GTOW	0	MAC	10	RI	0	UNK	13
ATM	190	EXTL	0	ICE	0	MED	1	SCF-NP	37	USOS	0
BIRD	73	F-NI	2	LALT	0	NAV	205	SCF-PP	9	WILD	10
CABIN	0	F-PPST	0	LOC-G	0	OTHR	203	SEC	47	WSTRW	0

Note: some incidents may have more than one Occurrence category

5. Specific Areas of Concern and Analysis

Based on the DCAC sections, the following areas of concern have been identified:

5.1 ATM/ANS:

1. MAC: Airprox/ACAS alert/loss of separation/(near) midair collisions
    - One (1) **Serious Incident**
        i. SMI with ATM contribution
    - Five (5) **Major incidents**
        i. Three (3) SMI with ATM contribution
        ii. One (1) SMI with no ATM contribution
        iii. One (1) unauthorized take off without clearance
    - Two (2) **Significant**
        i. One (1) ACAS/RA with no ATM contribution
        ii. One (1) Inadequate Separation with ATM contribution
    - Two (2) **Not determined**
        i. Two (2) ACAS RA with no ATM contribution

Based on the above, five (5) SMIs were reported within 2019, one (1) **Serious** and three (3) **Major** with ATM contribution and one (1) with NO-ATM contribution. Comparing with 2018, thirteen (13) SMIs were reported; five (5) with ATM Contribution and eight (8) with NO-ATM contribution. It must be noted that data for 2018 were extracted from the National Supervisory Authority's (NSA) occurrence monitoring system.

Year	Total	ATM contribution	No-ATM contribution
2019	5	4	1
2018	13	5	8

NSA had several meetings with the ATS-SMS Function with respect of the Separation Minima Infringement (SMI) incidents. The primary causal factor for these was human error, although various contributing factors were identified, such as poor ATC practices or high workload. The NSA monitors closely the processing of SMIs by the concerned ANSPs, as part of its regular oversight activities.

2. RI: Runway Incursions

No Runway Incursion were reported within 2019. In 2018, one (1) Runway Incursion was reported. It must be noted that data for 2018 were extracted from the NSA occurrence monitoring system, since occurrence reports were not submitted systematically in ECCAIRS database. The NSA monitors closely the processing of runway incursion incidents, as part of its regular oversight activities.

3. NAV: Navigation Error

Regarding the occurrences related to navigation errors, the majority of the reported incidents had to do with airspace penetration/infringement. Due to the continued denial of Turkey to corporate with the legally recognised Civil Aviation Authority of the Republic of Cyprus as well as the frequent interventions of the illegal station "ERCAN", inbound traffic from Ankara FIR regularly enters Nicosia FIR in an inappropriate and sometimes unsafe manner. At least 171 such cases were reported within 2019. In 2018, there were 239 such incidents, therefore a -29% reduction was noted.

These incidents are classified as "Significant" ones. DCAC and the State have taken all feasible measures to mitigate this issue.

5.2 ADR

1. BRD: Birdstrikes & WILD: Collision Wildlife

73 occurrences were reported concerning confirmed Bird strikes and collision wildlife within 2019.

2. RAMP: Ground Handling

2 occurrences were reported concerning FOD Apron/stand.

5.3 Airworthiness

1. Number of reports

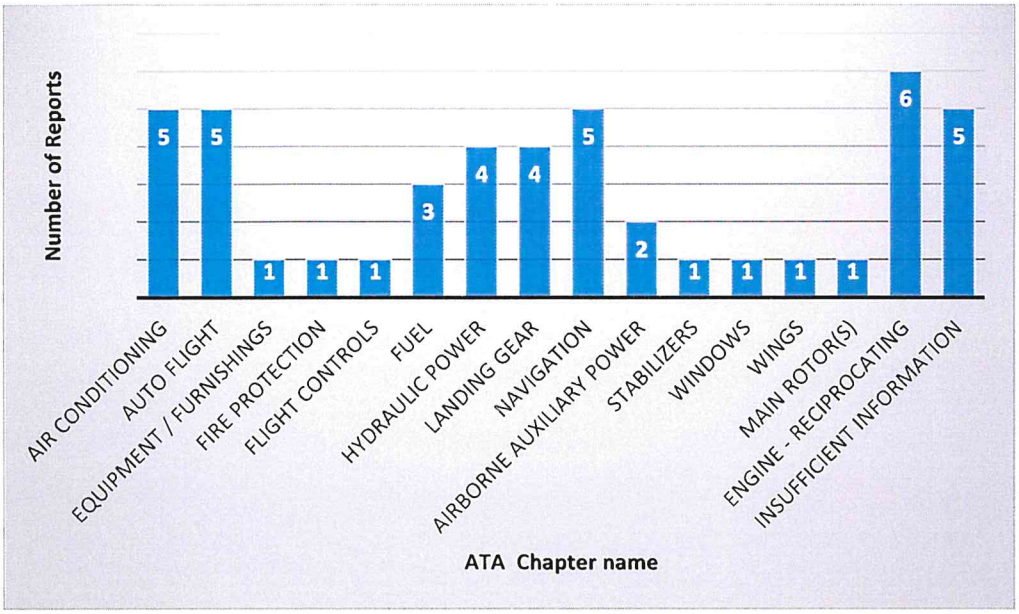
A total of 46 airworthiness domain related occurrences were reported in the year 2019, in comparison with a total of 45 reported in 2018. The table below shows the top 5 (year 2019) reports by ATA 100 Chapter:

ATA Number	ATA Chapter name	Number of reports for 2019
ATA 72	ENGINE - RECIPROCATING	6
ATA 21	AIR CONDITIONING	5
ATA 22	AUTO FLIGHT	5
ATA 34	NAVIGATION	5
	INSUFFICIENT INFORMATION	5

Out of the 46-airworthiness domain related occurrences reported in the year 2019 only two (2) were classified as Serious incidents, both related to ATA 21 – Auto flight system. The remaining were classified as follows:

- Thirty-six (36) occurrences were classified as incidents
- Three (3) occurrences with no flight intended
- Three (3) observations
- For two (2) occurrences the classification could not be determined due to insufficient information

The bar-chart below is a breakdown of all airworthiness domain related reports by ATA Chapter:



2. IFSD: In-Flight (engine) Shut Down

No in-flight engine shut downs were reported in 2019, the same number as in the previous year.

3. SCF-PP: System / component failure or malfunction (powerplant)

A total of nine (9) occurrences were reported under this category in the year 2019. A percentage of 56% (5 reports) were on general aviation reciprocating engine aircraft. Three (3) of those concerned minor engine vibration levels and two (2) concerned engine high temperature indications.

4. SCF-NP: System / component failure or malfunction (non-powerplant)

This was the biggest category of reported occurrences for the year 2019 with a total of thirty-seven (37) reported occurrences. Five occurrences each (a percentage of 14%) were related to ATA Chapters 21- Air conditioning, 22-Autoflight (of which two (2) were classified as serious incidents) and 34-Navigation. A total of five reported occurrences had insufficient information submitted in the reports.

6. Trends Identified and Actions Decided/taken

6.1 ATM/CNS Technical

An increase of incidents concerning the TopSky radar system was noted in 2019. Erroneous STCA alarms, multi-correlations and display's labels issues were reported as the main sources of these occurrences. The NSA noted this area of concern and intervened by asking from the safety managers of CyATS and CNS to expedite the speedy resolution of these issues.

After the introduction of Mode-S and the upgrade of TopSky system at Nicosia ACC, it was been observed that the number of incidents reported for the 2nd half of the year (2019) was decreased by 60% compared with the 1st half. It is expected that the number of erroneous STCAs incidents will be further reduced within 2020, since more upgrades of the Topsky system are planned.

6.2 ADR

No significant trend was identified with regard to the two (2) Ground Handling occurrences. One was related to FOD and one to Ground handling equipment collision with stationary aircraft.

From an analysis of the 73 Birdstrike and Wildlife collision occurrences reported, the following were observed:

- 28 relate to occurrences outside LCA and PFO airport areas controlled by the aerodrome operator.

- 45 relate to occurrences within LCA and PFO airports area controlled by the aerodrome operator. These are split, depending on their occurrence location to:
    - 25 collisions at LCA airport
    - 20 collisions at PFO airport

  The aerodrome operator has established Birdstrike/Wildstrike safety performance indicators for each airport. Based on the 2019 indicators, the predefined target values were not exceeded. Based on the above, no significant trend was identified. Nevertheless, a continuous monitoring of situation regarding birdstrike occurrences at the two airports will be maintained.

6.3 Airworthiness

No significant trend exists in the total number of reports submitted. From the analysis in section 5.3 of this document it is concluded that:

- the general aviation operations, albeit small in number, pose the highest risk in the airworthiness domain. The Airworthiness Section oversight activity, in conjunction with the A.C.A.M. (Aircraft Continuing Airworthiness Monitoring) program, will be adjusted to pay particular attention to these activities
- a relatively large percentage of reports did not provide sufficient information to enable the competent authority to analyse them effectively. This issue has already been identified and the DCA has increased efforts, in the form of presentations, Aeronautical Information Circulars etc., to promote proper occurrence reporting by the stakeholders.

7. Conclusions

Considering that the air traffic demand of 2019 was higher by 4.5%, it can be concluded that the levels of safety in 2019 were satisfactory (e.g. SMIs within 2019 were reduced compared to 2018) and that improvements compared to the previous year were made. Nevertheless, DCAC should continue to monitor the underlying reasons behind the areas of concern and the trends identified and should ensure that effective corrective actions are taken, if and where deemed necessary.

NSA had identified the issue of Separation Minima Infringement (SMI) incidents and had several meetings on this with the ATS-SMS Function. The primary causal factor was identified as human error, although various contributing factors were identified, such as poor ATC practices or high workload. The NSA monitors closely the processing of SMIs by the concerned ANSPs, as part of its regular oversight activities.

A relatively large percentage of reports did not provide sufficient information to enable the competent authority to analyse them effectively. It was specifically noted not all mandatory fields are completed by reporters. It was also noted that occurrence class, occurrence category and event type coding fields were either not completed or were completed incorrectly by many reporters. This issue has already been identified and the DCA has increased efforts, in the form of oversight audits, presentations, Aeronautical Information Circulars etc., to promote proper occurrence reporting by the stakeholders.