



REPUBLIC of SAN MARINO CIVIL AVIATION AUTHORITY

Via Consiglio dei Sessanta, 99
47891 Dogana
Republic of San Marino
TEL: +378 (0549) 882929 | FAX: +378 (0549) 882928

SAFETY NOTICE No. 01/2023 Issue 01

ANALYSIS OF SAFETY DATA

At the end of the year, San Marino CAA conducts an analysis of Safety Data. As San Marino is a small State, the data sample size is relatively small and we recognise that this can be subject to some random variation or 'statistical noise'. Scores from the European Risk Classification (ERC) are shown as a guide to the safety risk assessment.

There are three sources of information provided:

- Safety Reports
- SAFA Inspection Findings
- CAA Inspector Findings

SAFETY REPORTS

Safety Reports are graded by CAA according to the European Risk Classification (ERC) method. This combines the severity of the outcome or potential outcome combined with the number and effectiveness of barriers remaining to prevent that outcome. This produces a numerical ERC score and may fall into the Low (green) Medium (yellow) or high (red) zones.

GPS Signal Disruption

GPS disruption or incorrect GPS data has been reported 4 times in 2022. Operators are advised to be vigilant and ensure suitable procedures are in place to detect and respond to such events, especially if they are operating close to known affected locations.

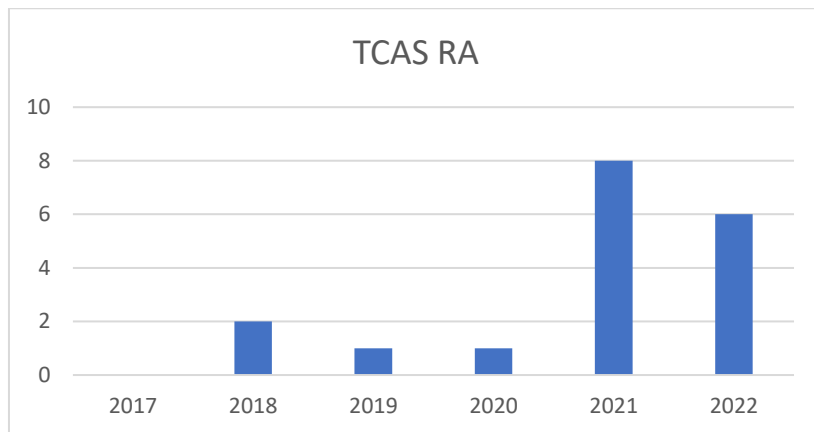
Location	Country	ERC	Date	Extract
Bodrum	Turkey	102	24/10/2022	Just before descent we had GPS light because of invalid signals on both receivers
Talil wpt	Turkey	1	08/09/2022	... in cruise, loss of both GPS abeam TALIL... a time change on our clock and a wrong altitude
Goodi wpt	USA NY	21	02/06/2022	GPS jamming near waypoint Goodi. Other aircraft reported similar issues.
Tallin	Estonia	20	08/01/2022	... climbing through FL120 ... loss of GPS signal followed by a loss of AHARS1 and 2 data.



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TCAS RA

TCAS RAs are less than last year and locations more varied, but still higher than pre-COVID numbers.



Location	Country	ERC	Date
Bremen	Germany	50	10/01/2022
Santa Ana CA	USA	10	29/03/2022
Subang	Malaysia	50	17/05/2022
Genova	Italy	50	29/08/2022
London	UK	50	30/10/2022
New York	USA	10	31/10/2022

Aircraft Maintenance not completed as Required

This was raised an issue last year and some actions taken, and it has not been prominent in the data this year. Only one report raised issues with an aircraft that had come straight from maintenance (experienced autopilot issues on take-off). However, five other reports (some from maintenance organisations) identified issues that suggested previous maintenance was likely sub-optimal, including flight controls mis-adjusted, worn tyres (which then burst), problem with slide deployment and incorrect engine preservation.



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FLAPS

Technical issues with Flaps have been reported 8 times in 2022. There were 4 reports in 2020, and 1 report in each of 2019, 2018 and 2016. These events are normally low risk when crew follow correct procedures.

DATE	PHASE	EVENT	ERC
11/11/2022	Landing	Flaps failure	2
24/10/2022	Descent	Flap Failure during Approach	10
06/05/2022	Landing	Flaps Fail Landing	2
06/04/2022	Take-off	Flaps Unable to Retract after Take Off	2
06/04/2022	Hangar	Previous repair to flap track rolling surfaced carried out, paint applied - not as per SRM	4
25/03/2022	Take-off	Flap failure during extension + diversion	4
03/02/2022	Hangar	Migrated Spherical Bearing on IB Flap Hinge Arm	2
29/01/2022	Descent	CATEC-27 Flaps fail on landing	4



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HIGHER RISK EVENTS

Safety Reports during 2022 scored at 100 ERC or above. Two events are due to Ukraine war.

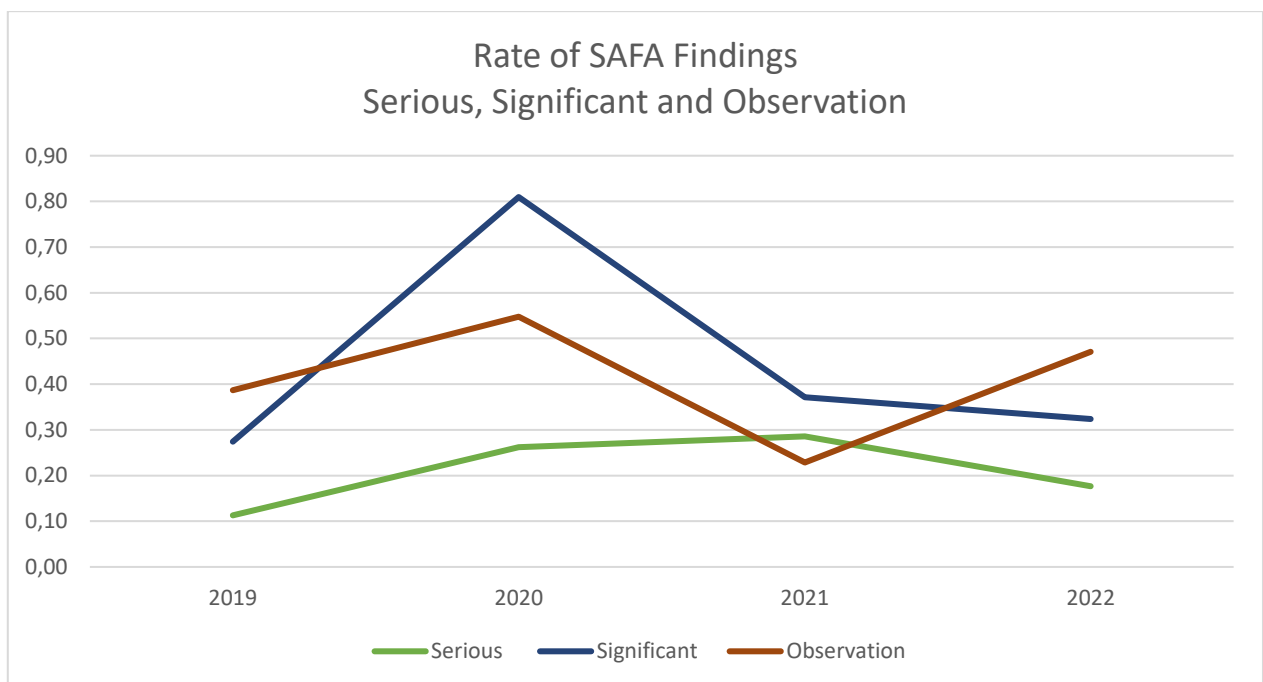
LOCATION	DATE	EVENT	ERC
Lahr, Germany	07/12/2022	Main entry door opened during flight in Beech B200T in Climb	502
Sharm el Sheik, Egypt	06/11/2022	EGPWS alert following crew co-ordination issues in Approach	102
Bodrum, Turkey	24/10/2022	EGPWS Activation following loss of GPS and late runway change in Descent	102
Hangar	17/10/2022	Cable burn marks found in Hawker 800	102
Hangar	19/07/2022	Damage/ bullet holes in Gulfstream G200 parked in Kyiv due war	502
San Marino	08/09/2022	Light aircraft runway excursion after landing, aircraft damaged	2500
Hangar	27/06/2022	Engine Logbook 1 & 2 missing at CAMO	100
Dubai, UAE	24/05/2022	Hawker 800XP Main wheel tyres burst on landing	101
Dubai, UAE	08/05/2022	Dassault Falcon 8X Wake encounter final approach 20 degree bank angle knocked out autopilot	102
Hangar	10/04/2022	G150 destroyed by missile attack, Ukraine	2500
Corfu, Greece	29/01/2022	Beech B200 Landing gear did not extend when selected	101



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SAFA FINDINGS

There has been a reduction in the rate of SAFA Findings this year, including those rated Serious (Level 1) and Significant (Level 2). This indicator monitors Findings per Inspection, so it is not affected by the number of SAFA Inspections performed.



This chart shows that in 2022, the rate of both Serious and Significant Findings during SAFA Inspections has fallen compared to the previous two years. The lesser category of Observations has risen compared to last year, where Observations were relatively low.

Year	SAFAs	Number of Findings				Rate of Findings Per Inspection		
		Serious	Significant	Observation	Total	Serious	Significant	Observation
2019	62	7	17	24	48	0.11	0.27	0.39
2020	42	11	34	23	68	0.26	0.81	0.55
2021	35	10	13	8	31	0.29	0.37	0.23
2022	34	6	11	16	33	0.18	0.32	0.47



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Serious SAFA Findings in 2022 included:

<ul style="list-style-type: none">• Access to emergency exits impeded by baggage or cargo
<ul style="list-style-type: none">• Cabin equipment/furnishing not used in accordance with manufacturer instructions/limits
<ul style="list-style-type: none">• Required portable EFB with type B applications not used according to operations manual procedures.
<ul style="list-style-type: none">• HFE not correctly secured
<ul style="list-style-type: none">• Emergency exit(s), lighting and marking unserviceable
<ul style="list-style-type: none">• Cabin equipment not properly secured.

Significant SAFA Findings included issues such as:

- Known defect not reported/assessed
- Maintenance action not properly recorded
- Pre-flight inspection performed but without noticing obvious defects
- AFM not up to date
- Equipment installations obviously not in compliance with Annex 8, Part IIIA/B, Chapter 4 Forward galley: household coffee machine and boilers (2200W) not secured.
- Operations manual not up to date
- Incorrect mass and balance calculations
- Emergency equipment immediate accessibility difficult
- Incorrect or incomplete information in NOTOC, not concerning CAO packages
- Incorrect mass and/or balance calculations

SAFA Observations are a category that is less severe, but raised issues on similar subject areas, plus several on out of date information (MELs and EGPWS database).



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CAA INSPECTOR FINDINGS

FLIGHT OPERATIONS

Findings by Flight Operations Inspectors in 2022 were:

Serious 10

Significant 311

Observations 69

Serious Findings included subjects such as:

<ul style="list-style-type: none">• Gap analysis not conducted
<ul style="list-style-type: none">• Hazard log not created.
<ul style="list-style-type: none">• Centrik functionality for the SMS
<ul style="list-style-type: none">• Broken cross link
<ul style="list-style-type: none">• Findings from Demo Flight 07DEC2022
<ul style="list-style-type: none">• Quality manual
<ul style="list-style-type: none">• MOR (poor report and remedial actions)
<ul style="list-style-type: none">• Financial anomalies (Justification of PPOB)
<ul style="list-style-type: none">• Process of flight authorisation
<ul style="list-style-type: none">• SMS Phase 1 completion

Significant Findings included subjects such as planning, documentation, MELs.



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AIRWORTHINESS

Findings by Airworthiness Inspectors in 2022 on CAT 1 OPS (not including CofA) were:

Serious	2
Significant	20
Observations	0

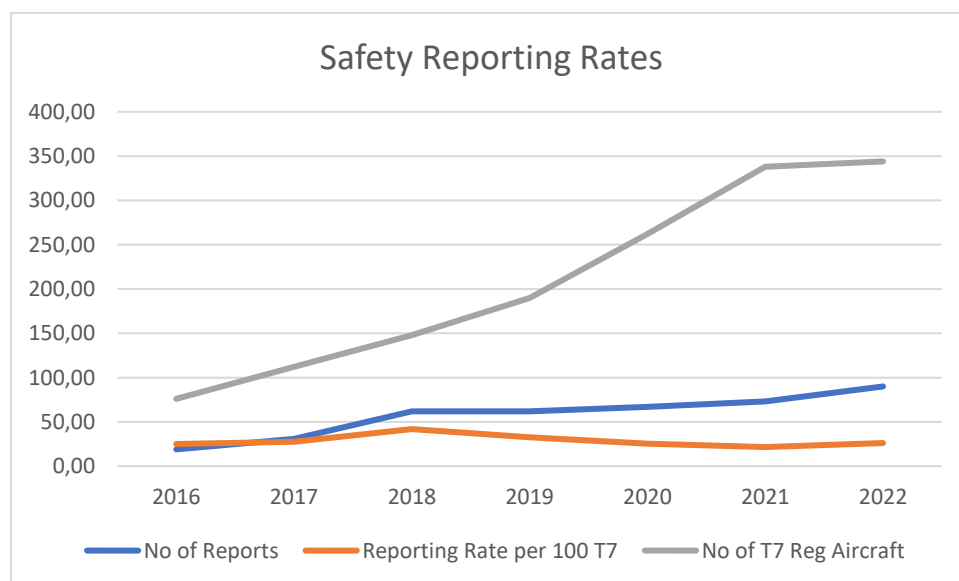
Serious Findings included:

- Timely MOR submission
- Lack of access to technical information (Justification of PPOB)

Other issues included internal audits, documentation, SMS, MELs, and training.

SAFETY REPORTING RATES

The number of safety reports received continues to grow, but not in proportion to the number of aircraft on the T7 Register. The chart below shows the increase in the number of reports (blue line) has not kept pace with the increase in the number of aircraft (grey line). The reporting rate (reports per 100 T7 aircraft) has levelled out following a peak in 2018.





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CONCLUSIONS

The three increasing trends raised last year have shown some reduction in 2022, although the volume of data is small and may be subject to statistical variation. Aircraft returning from maintenance reporting shortcomings or technical issues has reduced from 10 to 1 (although five further reports refer to subsequent issues found, that may have occurred during previous maintenance). TCAS RA has reduced from 8 to 6 and locations are more diverse. The rate of Serious SAFA Findings has reduced from 0.29 to 0.18 per Inspection performed and we hope this will continue to fall, and return to pre pandemic levels (e.g. 0.11 in 2019). The number of Safety Reports has continued to rise, but reporting rates have levelled out; complete reporting should be encouraged.

It is hoped that this information from the San Marino safety database will be of interest to the operational community and Inspectors alike. It provides an overview of the main issues being raised and may support operational teams in their own internal checking procedures. This information is also available as a slide pack with narration.

Eng. Marco Conti
Director General

21st January 2023