European Union Aviation Safety Agency

Safety Information Bulletin

Operations

SIB No.: 2022-07

Issued: 28 July 2022

Subject: **Re-Entry into Earth's Atmosphere of Space Debris of Rocket Long March 5B (CZ-5B)**

Ref. Publications:
None.

Applicability:
EASA Member State (MS) National Aviation Authorities (NAAs), Air Navigation Service Providers (ANSPs), and aircraft operators.

Description:
This SIB is issued to raise awareness on the expected re-entry into Earth's atmosphere of the large space object Rocket Long March 5B (CZ-5B).

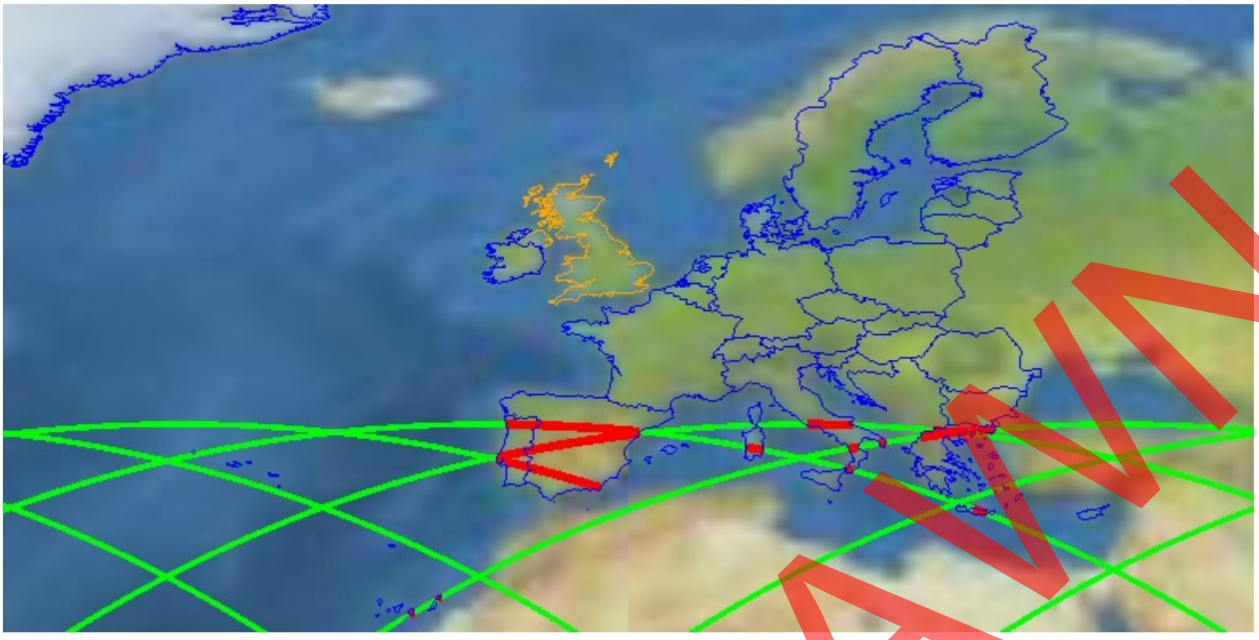
The European Union (EU) Space Surveillance and Tracking (SST) experts have estimated that the debris generated by the aforementioned object will likely re-enter the Earth's atmosphere in an uncontrolled manner between 30 and 31 July 2022. Object CZ-5B has an estimated mass ranging between 17 and 22 tons, which makes it one of the largest pieces of debris re-entering the atmosphere in recent years. For this reason, it deserves careful monitoring.

As this is an uncontrolled re-entry, it is difficult at this point in time to predict exactly the trajectory of debris and where on Earth the parts will fall. A more detailed prediction could be available only a few hours before impact. As a guideline, the current forecast is for the following time window:

- Window Start (UTC): 2022-07-30 09:14:49.057000Z
- Window End (UTC): 2022-07-31 18:08:49.057000Z
- Max. Latitude [°]: 41.47

The EU SST has estimated a variety of possible re-entry trajectories one of which could affect the southern European airspace. Areas / airspace potentially affected are: Bulgaria, France, Greece, Italy, Malta, Portugal, Spain (see Figure 1 of this SIB).

Figure 1 – Map of the ground track across the area of interest



--- RE object overflight out of the AOI --- RE object overflight over the AOI

Source: EU SST

At this time, the safety concern described in this SIB is not considered to be an unsafe condition that would warrant Safety Directive (SD) action under Regulation (EU) 965/2012, Annex II, ARO.GEN.135(c).

Recommendation(s):

EASA recommends the concerned NAAs, ANSPs and aircraft operators to:

- Regularly monitor and take into consideration the latest predictions regarding the uncontrolled re-entry into Earth's atmosphere of large space CZ-5B object published by the European Union Satellite Centre (SatCen) available at the EU SST website, particularly the monitoring webpage.

- Adapt the risk assessments according to evolving situation and information available.

EASA recommends the concerned MS authorities (e.g. NAAs) to:

- Consider to implement and notify airspace restrictions on a 200 km-wide path around each of the re-entry passes as forecasted by the EU SST at the foreseen times (see Appendix 1 of this SIB).

MS NAAs are also reminded that, in line with International Civil Aviation Organization Annex 15 Standard 6.3.2.3, a Notice to Airmen (NOTAM) should be considered to be issued in line with the following provision:

*“m) presence of hazards not otherwise promulgated, which affect air navigation (including obstacles, military exercises and operations, intentional and unintentional radio frequency interferences, rocket launches, displays, fireworks, sky lanterns, **rocket debris**, races and major parachuting events)”*

Contact(s):

For further information, contact the EASA Safety Information Section, Certification Directorate, E-mail: ADs@easa.europa.eu.

Appendix 1

Re-entry Analysis Report
Unclassified / LIMITE (Official Use Only)

Creation Date (UTC): 2022-07-27T17:02:05.060267Z

Overflights

AOI	Entry Epoch (UTC)	Entry Lat. (°)	Entry Lon. (°)	Exit Epoch (UTC)	Exit Lat. (°)	Exit Lon. (°)
NC	2022-07-31T02:37:15Z	-20.28	164.43	2022-07-31T02:37:18Z	-20.38	164.57
NC	2022-07-31T02:37:19Z	-20.44	164.65	2022-07-31T02:37:22Z	-20.55	164.80
NC	2022-07-31T02:37:26Z	-20.72	165.03	2022-07-31T02:37:31Z	-20.92	165.31
NC	2022-07-31T02:37:43Z	-21.41	165.96	2022-07-31T02:37:43Z	-21.41	165.97
NC	2022-07-31T02:37:48Z	-21.62	166.26	2022-07-31T02:37:53Z	-21.81	166.51
NC	2022-07-31T02:37:57Z	-21.99	166.76	2022-07-31T02:38:01Z	-22.16	166.99
ESCN	2022-07-31T03:24:12Z	27.77	-15.69	2022-07-31T03:24:17Z	27.96	-15.37
ESCN	2022-07-31T03:24:42Z	28.85	-13.79	2022-07-31T03:24:43Z	28.87	-13.76
ESCN	2022-07-31T03:24:44Z	28.92	-13.67	2022-07-31T03:24:48Z	29.03	-13.46
IT	2022-07-31T03:31:31Z	39.66	15.82	2022-07-31T03:31:39Z	39.78	16.49
IT	2022-07-31T03:31:58Z	40.05	18.02	2022-07-31T03:32:04Z	40.14	18.51
GR	2022-07-31T03:32:33Z	40.50	20.97	2022-07-31T03:33:14Z	40.92	24.37
GR	2022-07-31T03:33:16Z	40.94	24.57	2022-07-31T03:33:21Z	40.97	24.99
GR	2022-07-31T03:33:23Z	40.99	25.16	2022-07-31T03:33:36Z	41.07	26.34
PT	2022-07-31T04:58:26Z	39.08	-9.42	2022-07-31T04:58:51Z	39.49	-7.38
ES	2022-07-31T04:58:51Z	39.49	-7.38	2022-07-31T05:00:29Z	40.76	0.75
FR	2022-07-31T05:02:07Z	41.38	9.15	2022-07-31T05:02:08Z	41.38	9.23
IT	2022-07-31T05:02:49Z	41.42	12.82	2022-07-31T05:03:28Z	41.37	16.19
GR	2022-07-31T05:04:33Z	41.01	21.86	2022-07-31T05:05:01Z	40.77	24.21
GR	2022-07-31T05:05:05Z	40.74	24.56	2022-07-31T05:05:07Z	40.72	24.77
PT	2022-07-31T06:30:25Z	41.43	-8.79	2022-07-31T06:30:53Z	41.36	-6.38
ES	2022-07-31T06:30:53Z	41.36	-6.38	2022-07-31T06:32:17Z	40.90	0.82
IT	2022-07-31T06:33:48Z	39.78	8.54	2022-07-31T06:34:02Z	39.59	9.66
IT	2022-07-31T06:35:14Z	38.29	15.51	2022-07-31T06:35:16Z	38.26	15.64
IT	2022-07-31T06:35:17Z	38.25	15.68	2022-07-31T06:35:23Z	38.11	16.16
GR	2022-07-31T06:37:16Z	35.41	24.78	2022-07-31T06:37:30Z	35.02	25.76
PT	2022-07-31T08:02:07Z	38.91	-9.43	2022-07-31T08:02:12Z	38.84	-9.08
PT	2022-07-31T08:02:13Z	38.81	-8.93	2022-07-31T08:02:35Z	38.37	-7.24
ES	2022-07-31T08:02:35Z	38.37	-7.24	2022-07-31T08:03:42Z	36.89	-1.99