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European Ramp Checks Find Increase

The rate of 'major' deficiency findings in 2005 was highest for aircraft based in the ICAO Western and Central African Region and the Eastern and Southern African Region.

BY RICK DARBY

Ramp inspections of aircraft at European airports turned up a higher rate of deficiency findings per inspection in 2005 than in the previous year but a lower rate of "major" deficiency findings per inspection. The inspections were carried out under the Safety Assessment of Foreign Aircraft (SAFA) program, a combined effort of the European Civil Aviation Conference (ECAC) and Joint Aviation Authorities.[1]

Deficiency findings per inspection averaged 1.56 in 2005, compared with 1.49 in 2004 and 1.24 for the 2000–2005 period (Table 1). From a peak rate of 2.83 in 1996, the rate had declined steadily until 2004.

The rate of findings per item inspected, which ECAC says "might give a better understanding," has also trended up recently. "For every 100 [SAFA] checklist items inspected, on average 3.0 findings were established in the years up to 2003," ECAC said. "In 2004, this increased to 4.6 findings per 100 items inspected and further increased in 2005 to 4.7 findings per 100 items inspected."

A checklist comprising 54 items is used for the inspections. Although the criteria for passing inspections are standardized, not all items are checked in each inspection.

Findings were categorized according to their severity: Category 1 represented "minor" findings, Category 2 "significant" findings and Category 3 "major" findings, based on the degree of deviation from International Civil Aviation Organization (ICAO) standards in Annex 1, Annex 6 and Annex 8. The rate of Category 3 findings per inspection fell from 0.24 in 2004 to 0.22 in 2005 (Table 1). (Rates have been rounded for this article.) The 2005 rate was still higher than the 2000–2005 average of 0.18 and higher than in any of the four years before 2004.

ECAC also reported the rates for combined Category 2 and 3 findings per inspected item in four areas: the flight deck, the passenger cabin, the general condition of the aircraft and the cargo compartment. Each area included three inspection items.

On the flight deck, the highest deficiency rate — 0.13 findings per inspected item — involved documentation, particularly the flight operations manual. ECAC said that "frequent" findings included "no approval by the State [nation] of [the] operator, content of the manual does not meet the ICAO standards, [and] the manual is not up to date or has been drafted by another

in Safety Deficiencies



Photos: European Civil Aviation Conference and Joint Aviation Authorities SAFA Program

airline." Equipment — for example, the lack of a terrain awareness and warning system — was second. Deficiencies related to the minimum equipment list were third.

In the passenger cabin, "emergency exits, lighting and marking, torches [flashlights]" had the highest deficiency rate, at 0.06 findings per inspected item. "The findings mainly concerned emergency exit lights which were not functioning properly; torches which were not available, in poor condition or not available in sufficient quantity; and non-installation or inadequate functioning of floor proximity (emergency) escape path marking systems." "Access to emergency exits," with findings such as obstruction by catering boxes, luggage and cargo, had nearly an equal rate. "Cabin attendant's station and crew rest area," which was largely concerned with whether required harnesses were in place and seats folded correctly, was third in the rate of deficiency findings per inspected item.

"Wheels, tires and brakes" topped the list of findings in general aircraft condition inspections, with a rate of 0.04 deficiencies per inspected item. ECAC cited "tires worn beyond limits, cuts in the tire, leakage of hydraulic fluid in landing gear areas [and] brakes worn beyond limits." The next-highest rate was for leakage of hydraulic fluid from areas other than the landing gear

'Major' Deficiency Findings: A Two-Year Rising Trend

Results of Safety Assessment of Foreign Aircraft Program, 2000–2005

		Number of Findings				Rate of Findings per Inspection			
Year	Number of Inspections	Category 1 (Minor)	Category 2 (Significant)	Category 3 (Major)	Total	Category 1 (Minor)	Category 2 (Significant)	Category 3 (Major)	All Categories
2000	2,394	1,274	1,035	278	**2,587**	0.53	0.43	0.12	**1.08**
2001	2,706	1,258	1,221	389	**2,868**	0.47	0.45	0.14	**1.06**
2002	3,234	1,384	1,219	461	**3,064**	0.43	0.38	0.14	**0.95**
2003	3,414	1,212	1,439	591	**3,242**	0.36	0.42	0.17	**0.95**
2004	4,568	2,349	3,375	1,075	**6,799**	0.51	0.74	0.24	**1.49**
2005	5,457	3,437	3,873	1,182	**8,492**	0.63	0.71	0.22	**1.56**
Total	**21,773**	**10,914**	**12,162**	**3,976**	**27,052**	**0.50**	**0.56**	**0.18**	**1.24**

Rates have been rounded.

Source: European Civil Aviation Conference and Joint Aviation Authorities

Table 1

Highest, Lowest Rates of 'Major' Deficiencies Vary by Factor of Five

Safety Assessment of Foreign Aircraft Program, Deficiencies by ICAO Region, 2005

ICAO Region	No. of Inspections	Number of Findings				Rate of Findings per Inspection			
		Category 1 (Minor)	Category 2 (Significant)	Category 3 (Major)	Total Findings	Category 1 (Minor)	Category 2 (Significant)	Category 3 (Major)	All Categories
APAC	145	106	101	43	250	0.73	0.70	0.30	1.72
ESAF	92	80	123	69	272	0.87	1.34	0.75	2.96
EUR/NAT	4,505	2,664	3,058	832	6,554	0.59	0.68	0.18	1.45
MID	368	283	345	154	782	0.77	0.94	0.42	2.13
NACC	214	143	99	29	271	0.67	0.46	0.14	1.27
SAM	83	101	71	17	189	1.22	0.86	0.20	2.28
WACAF	50	60	76	38	174	1.20	1.52	0.76	3.48

APAC = Asian and Pacific ESAF = Eastern and Southern African EUR/NAT = European and North Atlantic ICAO = International Civil Aviation Organization
MID = Middle East NACC = North American, Central American and Caribbean SAM = South American WACAF = Western and Central African

The ICAO region shown is based on the state of registration of the aircraft inspected.

Source: European Civil Aviation Conference and Joint Aviation Authorities

Table 2

and leakage of oil, fuel and water. The lowest rate for the three inspection items was for deficiencies related to the powerplants and pylons.

In the cargo compartment, "safety of cargo on board" had the highest deficiency rate, at 0.11. "In several cases, it was established that cargo … was not properly secured," ECAC said. "Heavy items (such as spare wheels) were not restrained, which might lead to damage of the aircraft in case of rapid acceleration/deceleration. In other cases, barrier nets were either not installed or in poor condition. Cargo containers and pallets were in poor condition. Locks to secure the containers were not in the proper position or unserviceable." Findings related to "dangerous goods" and the "general condition" of the cargo compartment had the second and third highest rates, respectively.

Findings of a SAFA inspection can lead, depending on the seriousness of the deviations, to several actions. The aircraft commander is asked to address the deficiencies brought to his or her attention. Occasionally, if the inspectors have cause to believe the commander does not intend to take the necessary measures, the authorities ground the aircraft until the corrections are made. In other cases, the aircraft crew is allowed to depart under operational restrictions, such as a requirement that substandard seats be unoccupied. Category 2 and 3 findings are communicated to the civil aviation authority that oversees the operator's home base.

In 2005, 13 aircraft were grounded, 47 were placed under flight restrictions and 708 required corrective actions before departure was authorized.

Under the SAFA program, officials from any of the 42 ECAC member countries can perform ramp checks on parked aircraft[2] based in other countries, whether those countries are ECAC members or not. During 2005, 32 ECAC countries performed 5,457 inspections on equipment of 748 operators from 133 countries. No attempt was made to inspect equal numbers of aircraft from each country or operator.

The rates of findings can be affected by the practice of most ECAC countries concentrating their inspections on operators that have been found deficient in the past, and by greater efficiency over time as inspectors have gained experience, ECAC says.

Under this method, inspection results for 2005 were tabulated by ICAO region (Table 2). The rate of Category 3 findings was highest for the Western and Central African Region and the Eastern and Southern African Region, and the lowest for the Northern American, Central American and Caribbean Region. "For each category of findings, the relative number of findings is higher for operators from non-ECAC States than for those from ECAC States," ECAC says. ●

Notes

1. Data are from a European Civil Aviation Conference report that can be found on the Internet at <www.jaa.nl/safa/safa.html>.
2. Aircraft types inspected in 2005 were predominantly airliners and business jets, along with a few smaller general aviation aircraft. Some helicopters were included.