



DEBRIEFING

Flight Safety is Everybody's Business

FOD

FOD stands for Foreign Object Damage – the damage caused to aviation assets, usually aircraft, by objects “foreign” to the aircraft or other asset in question. In the parlance of air operations, FOD has also become a stand-alone noun used to denote trash, rubble and tools, anything that is out of place and could result in damage. For example - “I just picked up this FOD on the airfield.” – this doesn’t mean I picked up foreign object damage but instead an item that could cause damage. So the term FOD is used quite flexibly in the aviation community.

Through casual reading of the incidents appearing on the Flight Safety Information Database (FSID) it appears that the frequency of FOD occurrences is rising. The Table and Graph herein tend to support this notion:

As an example of a FOD occurrence we chose a recent FOD incident from 15 Wing that took place on 28 February 2005.

OCCURRENCE DESCRIPTION - FOD: During a Thru flight inspection (equivalent to “A” Check), the technician found a NAV CANADA Flight Supplement GPH 205 in the nose equipment bay.

INVESTIGATION - The technical investigation revealed that this aircraft had returned from a cross-country trip the morning this incident occurred. It subsequently flew for 3 flights (3.6 AF hrs), before a technician found the FOD in the nose E bay. 2CFFTS had previously provided a directive that nothing will be placed in the E bay of the nose of the *Hawk* a/c at any time.

The pub was not reported as being left in the E bay by the aircrew from a previous cross-country flight

YEAR	1 Wing	3 Wing	4 Wing	5 Wing	8 Wing	9 Wing	12 Wing	14 Wing	15 Wing	17 Wing	19 Wing	AETE	CATC YPG	NDQAR (E)	NDQAR (M)	Cadets All	TOTAL
2000	18	18	37	1	11	1	8	18	15	8	13	4	0	0	0	3	155
2001	28	9	36	1	29	2	12	37	17	4	15	1	2	0	1	3	197
2002	28	15	26	0	22	3	9	23	23	3	9	2	2	0	1	2	168
2003	31	11	31	2	20	0	10	18	42	4	12	5	2	2	3	2	195
2004	26	15	36	0	21	0	28	15	59	8	13	3	0	4	1	5	234
2005	16	5	13	1	11	0	6	4	37	3	1	2	1	1	4	0	105
TOTAL	147	73	179	5	114	6	73	115	193	30	63	17	7	7	10	15	1054

Table 1: FOD Occurrences by Wing/Year (Note - The numbers for 2005 include occurrences up until 24 June 2005)

and there is no reason for aircrew to store pubs in the E bay for local flights. The FOD was removed and a FOD check was carried out in the E bay, with no further FOD found. The aircraft was subsequently checked serviceable and released for flight.

It cannot be precisely determined when the NAV CANADA pub was left in the E bay but it most likely was placed there during a cross-country trip. It is suspected that the owner of the pub was unaware of its loss, indicating that good FOD practices of accounting for personal items when entering, exiting the aircraft and during pre-flight activities were not carried out.

There have been many FOD incidents on NFTC aircraft with pens being the major contributing factor along with items such as in this incident. The safety issues are of a major concern at 15 Wing NFTC, in addition to the a/c downtime, associated with carrying out FOD checks. The conclusion of this investigation is that 2CFFTS is very aware of this FOD problem and continue to aggressively pursue previously recommended Preventive Measures, including directives to aircrew to mitigate this problem. The cause of this incident is that an aircrew member displayed a lower than normal level of attention to detail and did not ensure that they left the a/c with all the items that they approached it with, resulting in this incident.

CAUSE FACTOR(S) - PILOT (32A) Error: Attention or Memory: Failed to Recognise Condition: In that an aircrew member failed to recognize that a personal item was left behind in the E bay, causing this incident.

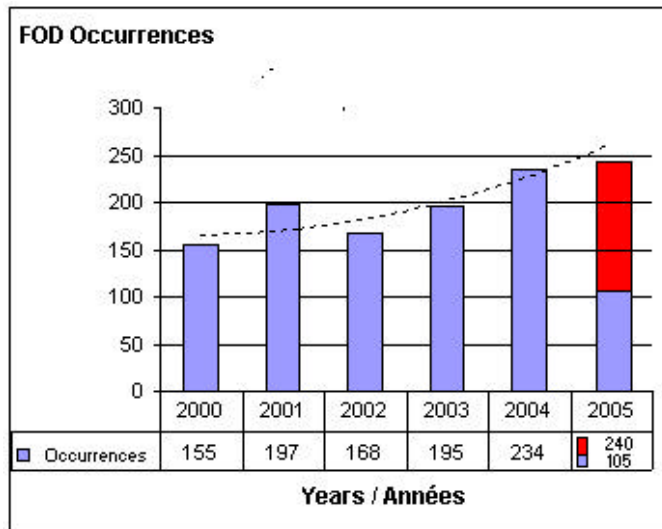
Condition of personnel: Mental States: In that the pilot displayed a lower than normal level of attention to good FOD practices and did not ensure that they left the a/c with all items that they approached it with, resulting in this incident.

PREVENTATIVE MEASURES - OPI: 2 CFFTS UFSO - Continue to pursue excellence in FOD mitigation practices within 2 CFFTS.

COMMENTARY - Scan the numbers for your Wing and see how you're doing over time and how you are doing in comparison to other Wings. We'd caution you to think about comparing apples to apples or similar operations, running similar aircraft, on similar airfields. In an Air Force as small and diverse as ours this is extremely difficult to do, so looking inward is probably of more value than outward.

Captain Vallée, DFS 3-4 Trending Analyst, provided Graph 1 below showing the trend line and projection for 2005. As you can see FOD occurrences are on the upswing. The difference in the number of occurrences from 2000 to 2004 represents a 51% increase.

We have "the what" but we don't have "the why". I suggest that "the why" is as individual as the occurrence itself **but**, the causes identified in the 15 Wing incident are probably very representative of the **human** factors involved in these occurrences.



Graph 1: FOD Occurrences by Year

There is an expression that "cleanliness is next to Godliness". For most of us this may be as close as we get, so I suggest you maintain good FOD practices and when you see FOD pick it up – if it doesn't save a life it will probably save an aircraft!