

**Recent military fatalities in Afghanistan by cause and nationality:
PERIOD 11a = interim report (see Summary & yellow shading)**

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Summary

a) During the 10 weeks of PERIOD 11a (22 February 2010 to 2 May 2010: the last four weeks of which coincided with the run-up to UK's parliamentary election on 6 May 2010), there were 79 coalition military deaths in Afghanistan (US 47, UK 19, Canada 2, other nations 11).

*b) A surge of 30,000 US troops had been deployed to Afghanistan to facilitate Operation Moshtarak which began in 2010. US deployment of 90,000 by province is reckoned as **NK1 (at least 9,000)** to Helmand, **NK2** to Kandahar and **NK3** elsewhere.*

*c) Military fatality rates in Afghanistan were: US – down significantly from **3.9** fatalities per 1,000 personnel-years in PERIOD 10 (95% CI: 3.3 to 4.6) to **2.7** (95% CI: 1.9 to 3.5) in PERIOD 11a; UK - **12.0** fatalities per 1,000 personnel-years (95% CI: 8 to 16) in PERIOD 10 and **9.9** (95% CI: 6 to 15) in PERIOD 11a {that is: **11.3** (95% CI: 8 to 14) in **PERIODS 10+11a**}.*

d) Military fatalities in Afghanistan by nationality were 17 v. 2 for UK but 35 v. 25 for US/Canada/other nations during the first 6 weeks v. later 4 weeks of PERIOD 11a in the run-up to UK's parliamentary election on 6 May 2010 (chi-square on 1df = 6.21, $p < 0.02$).

*e) In the 40 weeks of PERIODS 9+10, there were **183** fatal IED incidents in Afghanistan, which caused 256 military deaths, but only **31** fatal IED incidents (causing 34 military deaths) in the 10 weeks of PERIOD 11a. The proportion of hostile deaths due to IEDs had increased significantly from 52% (136/260; 95% CI 46% to 58%) in PERIOD 9 to 64% (120/188; 95% CI 57% to 71%) in PERIOD 10 but was again around half in PERIOD 11a: 49% (34/70; 95% CI 37% to 60%).*

f) In summary, UK military fatality rates in Afghanistan from over 80-weeks or 50-weeks from 1 May 2006 to 2 May 2010 have been:

PERIODS 1+2+3+4: 8.9 per 1,000 pys (95%CI: 7 to 11, based on 76 fatalities in 8,580 pys)

PERIODS 5+6+7+8: 6.5 per 1,000 pys (95%CI: 5 to 8, based on 77 fatalities in 11,896 pys)

PERIODS 9+10+11a: 13.6 per 1,000 pys (95%CI: 11 to 16, based on 123 fatalities in 9,039 pys).

1. Background

Since 1 May 2006 we have reported every 20 weeks on military fatalities in Afghanistan and Iraq by cause and nationality. Our analyses^{5,3} rely on icasualties.org, to which we make acknowledgement. Date and cause of fatalities on icasualties.org are subject to change as well as to updating. For example, in late July 2009, military fatalities in Afghanistan in the first half of PERIOD 9 were shown as 119, but now as 120.

Because the initial phase of Panther's Claw, a major counter-insurgency operation in the run-up to elections in Afghanistan, ended mid-way through PERIOD 9, unusually we reported a mid-point analysis: please see **Journal of the Royal United Services Institute 2009; 154: 30-38 & 40-45**^{35,36}.

With two mid-point exceptions – determined by UK’s withdrawal from Basra City and, as above, the initial phase of Panther’s Claw having ended - our analyses, until now, have related to 140-day PERIODS: see below.

Our next update was intended to relate to the 140 days of PERIOD 11 (22 February to 11 July 2010) but, for three reasons, we present an interim report mid-way through PERIOD 11. First, the mid-point of PERIOD 11 marks four years’ reporting by us on military fatalities in Iraq and Afghanistan; next, the second half of PERIOD 11 follows the UK’s parliamentary election which was held on 6 May 2010; thirdly, and most importantly, even in 10 weeks that overlapped the end of the Afghan winter, UK military fatalities in Afghanistan have averaged two per week so that, in 2010, UK can expect at least as many military fatalities in 10 weeks in Afghanistan as in 20 weeks in 2006. Throughout 2010/11, we therefore plan to make interim 10-weekly reports so that our intensity of monitoring keeps pace with the intensity of combat which UK forces may encounter in Afghanistan.

PERIOD	From	To
1	01 May 2006	17 September 2006
2	18 September 2006	04 February 2007
3	05 February 2007	24 June 2007
4 (mid-point)	25 June 2007	2 September 2007 11 November 2007
5	12 November 2007	30 March 2008
6	31 March 2008	17 August 2008
7	18 August 2008	04 January 2009
8	05 January 2009	17 May 2009
9 (mid-point)	18 May 2009	26 July 2009 04 October 2009
10	05 October 2009	21 February 2010
11 (mid-point)	22 February 2010 (UK election: 6 May)	2 May 2010 11 July 2010
12 (mid-point)	12 July 2010	19 September 2010 28 November 2010
13 (mid-point)	29 November 2010	6 January 2011 17 March 2011

2. Methods briefly

We report fatality rates per 1,000 personnel-years. Four thousand troops in a theatre of operation for 3 months contribute 1,000 personnel-years (pys). So too do 1,000 personnel in theatre for one year. Analytically, we characterise “major combat” by a military fatality rate of 6 or more per 1,000 pys.

We analyse the lethality of IED (only) incidents. As in Bird and Fairweather⁵, we exclude from this analysis multiply-ascribed deaths, such as IED and small arms fire or IED and rocket propelled grenade/grenades. A singleton fatal IED attack in Iraq during PERIOD 5 in which a suicide vehicle was used has been coded as ‘suicide bomb’ rather than IED; and similarly a suicide car bomb-IED attack in PERIOD 9 in Afghanistan. Unusually, triple hostile fire US fatalities in Afghanistan and a UK singleton SAS death

in PERIOD 6 were coded as ‘explosion’; and likewise the death of a UK lance corporal in PERIOD 7. We have not counted them as IED deaths.

We need to track changes in deployment. In PERIOD 5, UK’s deployment to Iraq reduced below 5,000 troops⁶⁻¹² and to Afghanistan was to have increased to 7,700, but seems to have remained at around 7,000¹⁰ until PERIOD 6¹³⁻¹⁵. Withdrawal of some 20,000 US combat troops from Iraq during PERIOD 5 was announced by President Bush: we have assumed that their number has effectively stood at 155,000 throughout PERIOD 5¹⁶⁻¹⁹ whereas US troops in Afghanistan have been reckoned at 31,000¹⁶ throughout PERIOD 5. In PERIOD 6 (7), US troop numbers have been reckoned as 150,000 (149,000) in Iraq and 35,000 in Afghanistan^{16, 20} despite some reports that both UK and US troop numbers were around 10% lower in Afghanistan²¹⁻²³; and as 139,000 and 39,000 in PERIOD 8 with the UK tallies maintained as in PERIOD 7²⁴⁻³⁴. In PERIOD 9, US and UK troop numbers have been taken as 57,000 and 9,000 respectively. By PERIOD 10, US troops were reckoned to be around 100,000 in Iraq and around 90,000 in Afghanistan after a further uplift of around 30,000 personnel was announced by President Obama (<http://www.cnn.com/2009/POLITICS/12/01/obama.afghanistan/index.html>; http://news.google.co.uk/news?hl=en&q=spectre+of+endless+wars&um=1&ie=UTF-8&ei=QIqHS9CZJoz00gS0rZDGCw&sa=X&oi=news_group&ct=title&resnum=1&ved=0CAsQsQQwAA) following a review of military strategy in Afghanistan which was led by General Petraeus (<http://news.bbc.co.uk/1/hi/8527266.stm>; http://news.bbc.co.uk/1/hi/world/south_asia/8389351.stm). Meanwhile, UK and Canadian troops had increased to 9,500 (which does not include mooted 500 “special forces”, see Straight Statistics (<http://www.straightstatistics.org/article/helicopter-numbers-do-we-have-lift>) and 2,800 respectively in Afghanistan (see CBC News, 24 February 2010: “Brace yourself, Canada, our big fight is just ahead”).

In PERIOD 11a, there is some debate about the totality of UK’s deployment to Afghanistan which we now show as 10,000 troops (although BBC’s Today programme on 14 May 2010 cited 10,500).

3. Results

3.1 Fatalities in Afghanistan and Iraq in PERIODS 1 to 11a

Iraq: For detail on military fatalities in Iraq in PERIODS 1 to 8, please see **Journal of the Royal United Services Institute 2009; 154: 30-38 & 40-45**^{35, 36}. By PERIOD 9, UK’s deployment to Iraq had effectively ceased. All 52 military fatalities in PERIOD 9 in Iraq were US personnel: 21 deaths were non-hostile, 21 occurred in fatal IED (only) incidents, and 10 were from other hostile causes. In PERIOD 10, all 30 military fatalities in Iraq were US personnel: 24 deaths were non-hostile, one occurred in an IED (only) incident, two from small arms fire, and one from IED and small arms fire, a US military fatality rate of **0.8** per 1,000 personnel-years (95% CI: 0.5 to 1.1). **In PERIOD 11a, all 17 military fatalities in Iraq were US personnel: nine were non-hostile, three deaths were from hostile fire, three in two fatal IED incidents, one in RPG and one in mortar attack.**

Afghanistan: **TABLE 1** summarises coalition military fatalities by nationality in Afghanistan where US personnel accounted for 49% of all military fatalities in PERIODS 1+2+3+4 (180/367; 95% CI: 44% to 54%), for 52% in PERIODS 5+6+7+8 (220/420; 95% CI: 48% to 57%), and for **63%** in PERIODS 9+10 (**320/506**; 95% CI: 59% to 67%). In PERIOD 11a, US personnel accounted for **59%** of coalition military fatalities (47/79; 95% CI: 49% to 70%).

TABLE 1 also shows that in PERIOD 11a, as in PERIODS 9+10 and 5+6+7+8 (see below), non-hostile causes accounted for only 9/79 (11%) military fatalities in Afghanistan. Four of these nine deaths occurred in two helicopter/aircraft crashes (3+1).

In PERIODS 9+10, non-hostile causes accounted only 58/506 military fatalities in Afghanistan (11%; 95% CI: 8% to 14%): 11 (7 + 4) of these 58 deaths occurred in two separate helicopter crashes in PERIOD 10 and six (2+3+1) in three helicopter/airplane crashes in PERIOD 9.

Likewise, in PERIODS 5+6+7+8, non-hostile causes accounted for 49/420 military fatalities in Afghanistan (12%; 95% CI: 8% to 15%) but for 88/367 fatalities in preceding 80 weeks of PERIODS 1+2+3+4 (24%; 95% CI: 20% to 28%).

Suicide bombings accounted for one military fatality in PERIOD 11a, for six (4 + 2) in PERIOD 10 and for seven (1+2+1+3) in PERIOD 9.

By nationality: Military fatality rates in Afghanistan were notably different by nationality, as indicated by non-overlapping 95% confidence intervals below, and consistently so in both the earlier and later 80-week-summary. In the most recent 40-weeks of PERIODS 9+10, UK and Canadian fatality rates are not differentiated.

Summary for PERIODS 1+2+3+4:

Canadians: 15.7 per 1,000 pys (95%CI: 12 to 20, based on 56 fatalities in 3,564 pys)
UK forces: 8.9 per 1,000 pys (95%CI: 7 to 11, based on 76 fatalities in 8,580 pys)
US forces: 4.9 per 1,000 pys (95%CI: 4.2 to 5.6, based on 180 fatalities in 36,577 pys).

Summary for PERIODS 5+6+7+8:

Canadians: 12.2 per 1,000 pys (95% CI: 9 to 16, based on 47 fatalities in 3,848 pys)
UK forces: 6.5 per 1,000 pys (95% CI: 5 to 8, based on 77 fatalities in 11,896 pys)
US forces: 4.1 per 1,000 pys (95% CI: 3.6 to 4.7, based on 220 fatalities in 53,388 pys).

Summary for PERIODS 9+10:

Canadians: 10.8 per 1,000 pys (95% CI: 7 to 16, based on 22 fatalities in 2,039 pys)
UK forces: 14.6 per 1,000 pys (95% CI: 12 to 17, based on 104 fatalities in 7,116 pys)
US forces: **5.7** per 1,000 pys (95% CI: 5.0 to 6.3, based on **320** fatalities in 56,538 pys).

In PERIOD 9, the combined US/UK/Canadian military fatality rate was as high at **9.8** per 1,000 personnel-years (95% CI: 8.5 to 10.9, based on **257** fatalities in 26,347 pys) as it had been three years earlier in PERIOD 1 (9.0; 95% CI: 7.3 to 10.7).

TABLE 1 shows that the US military fatality rate decreased dramatically from **8.4** (95% CI: 7.2 to 9.6) in pre-surge PERIOD 9 through **3.9** (95% CI: 3.3 to 4.6) in PERIOD 10 to **2.7** (95% CI: 1.9 to 3.5) in PERIOD 11a, whereas the UK military fatality rates, albeit decreased by a third, remained consistent with major combat throughout PERIOD 9 to 11a: down from **17.3** (95% CI: 13 to 22) in PERIOD 9 to **11.3** (95% CI: 8.5 to 14.1) in PERIODS 10+11a. The *Canadian* fatality rate of **13.5** (95% CI: 7 to 23) in PERIOD 9 halved to **6.8** (95% CI: 3 to 12) in PERIODS 10+11a.

In PERIOD 11a, the combined US/UK/Canadian military fatality rate was **3.4** per 1,000 personnel-years (95% CI: 2.6 to 4.3, based on **68** fatalities in 19,769 pys). The US military fatality rate, but not the UK/Canadian rate, decreased significantly between PERIOD 10 and 11a, see **TABLE 1**.

Intriguingly, military fatalities were 17 versus 2 for UK personnel but 35 versus 25 for US/Canadian/other personnel during the first 6 weeks versus later 4 weeks of PERIOD 11a in the run-up to UK's parliamentary elections (chi-square on 1df = 6/21, $p < 0.02$).

PERIOD 11a	UK military fatalities	US+Canadian+other military fatalities	Totals
First 6 weeks	17	30+1+ 4 = 35	52
Later 4 weeks	2	17+1+ 7 = 25	27
Totals	19	47+2+11 = 60	79

3.2 Fatal IED (only) incidents: variations

TABLE 2 shows military fatalities in IED (only) incidents, hereafter IED incidents, in Iraq and Afghanistan.

Afghanistan: In Afghanistan, where the number of fatal IED incidents roughly doubled from 12 in PERIOD 3 to 27 in PERIOD 4 ($p < 0.02$), there were thereafter 29+39+42+34 = 144 fatal IED incidents in PERIODS 5+6+7+8.

Lethality per fatal IED incident in PERIODS 5+6+7+8 was 216 fatalities in 144 fatal IED incidents in Afghanistan, a mean of 1.5 deaths per fatal IED (only) incident {sd = 0.83}, consistent with Iraq.

In PERIODS 9+10, fatal IED incidents more than doubled per PERIOD to 94+89 = 183 fatal IED incidents. These 183 fatal IED incidents in PERIODS 9+10 cost the lives of 136+120 = 256 military personnel, a mean of 1.4 deaths per fatal IED (only) incident {sd = 0.91}, and so conferring a lethality which was not significantly lower than in PERIODS 5+6+7+8 {because se for the difference in means is 0.1}. There were, however, fewer fatal IED incidents (31) in the 10 weeks of PERIOD 11a than would have been expected (45.8) had the rate of 0.65 fatal IED incidents per day persisted into PERIOD 11a.

The proportion of hostile deaths due to IEDs increased significantly from 52% (136/260; 95% CI: 46% to 58%) in PERIOD 9 to 64% (120/188; 95% CI: 57% to 71%) in PERIOD 10 **but reverted to around half in PERIOD 11a: 49% (34/70; 95% CI: 37% to 60%).**

4. Discussion

Helicopters. In early 2009, air support for Canadian forces was increased to 14 helicopters for 2,500 personnel (six Chinook-style and eight other helicopters: **5.6 helicopters per 1,000 personnel**) to meet a stipulation for Canadian troops' continued presence in Afghanistan (see <http://www.forces.gc.ca/site/news-nouvelles/view-news-afficher-nouvelles-eng.asp?id=2816>). Canada's deployment increased to 2,800 by PERIOD 10.

Before the loss of two UK Chinooks during PERIOD 9, thankfully without fatalities, UK's provision of helicopters had been reported as between 23 (*Times*: 10 Chinook-style and 13 others) and 30 for 9,000 troops (and so **at most 3.3 helicopters per 1,000 personnel**) - well below that of US and Canadian counterparts. UK's deployment in Afghanistan increased to at least 9,500 by PERIOD 10 with only a modest increase to date in helicopter cover (gained 7 Merlins). Operationally, two Merlins can be considered to equate to a Chinook, and so UK's current provision for some 10,000 troops seems to be at best 35 helicopters (which includes 11.5 Chinook-equivalents), not yet the 50 that may be required for international comparability: see Straight Statistics (<http://www.straightstatistics.org/article/helicopter-numbers-do-we-have-lift>).

Operations. A major counter-insurgency operation that began in Afghanistan in June 2009 ended its initial phase midway through PERIOD 9. Thereafter, Operation Moshtarak began in the second half of PERIOD 10 once US reinforcements of some 30,000 troops had been deployed.

Fatality rates in Afghanistan had doubled in PERIOD 9 relative to PERIOD 8 but between PERIODS 9 and 11a reduced progressively by a factor of two-thirds for US military personnel; and nearly halved for UK/Canadian forces.

There are thus some early signs that the Petraeus-surge in Afghanistan may pay dividends as it did in Iraq. However, stark political and geographical differences between Iraq and Afghanistan make the military challenges also distinctive. In both countries, surge was quickly instigated in the PERIOD after US military's fatality rate first clearly exceeded major combat, namely 6 deaths per 1,000 personnel-years - which it did in PERIOD 2 in Iraq, and in PERIOD 9 in Afghanistan.

However, quite substantial winter-related decreases have been evident in Afghanistan hitherto - see PERIODS 2 and 5, both of which were pre-surge. Thus, the observed decreases cannot necessarily be attributed to the surge alone. PERIOD 11a ended in early May before the anticipated post-planting renewal of major hostilities.

In PERIOD 11a, the US military fatality rate was significantly lower than it had been in PERIOD 10 but an equivalent claim for UK/Canadian cannot be made authoritatively – despite a disproportionate decrease in UK military fatalities in the last four weeks of PERIOD 11a which coincided with the run-up to UK parliamentary elections but also with roulement of some UK forces, such as 3 Rifles.

Winter may have contributed in part to the stay in IED escalation, a greater availability and use of air transport, better armoured road transport, better disruption of the enemy’s supply routes or more IED-detections. Information on IED-detections is not routinely in the public domain.

Deployment. Has the Canadians’ historically highest of US/UK/Canada fatality-rates in Afghanistan been effectively counteracted, inter alia by Canada’s decision to increase air support and by altered US/Canadian responsibilities in Kandahar? The provisional answer in PERIOD 10 was: yes, it has. The evidence continues in the same vein in PERIOD 11a, but will become more definitive over the next 10+20 weeks.

Indirect insight into other operational changes, including differential deployment to provinces within Afghanistan of now substantially more US personnel, is gleaned by comparing the provincial locations of 367 US military fatalities in PERIODS 9, 10 and 11a (see below).

Expectations shown in brackets *in italics* assume a common-provincial-distribution of US military fatalities across PERIODS 9+10, an hypothesis which the data do not conform to (comparison of observed versus expected fatalities by location gives χ^2 on 2 degrees of freedom of 24.7, $p < 0.001$). There is thus circumstantial evidence that US operational changes occurred during PERIODS 9+10. By contrast, the observed deaths are consistent with a common-provincial-distribution of US military fatalities across PERIODS 10+11a.

Location of US military fatalities	Helmand	Kandahar	Elsewhere in Afghanistan/NA	US TOTALS
PERIOD 9	39 {47.2}	18 {30.5}	127 {106.4}	184
PERIOD 10	43 {34.8}	35 {22.5}	58 {78.6}	136
PERIOD 11a	16	7	24	47
Total	99	61	209	367

There is thus indirect evidence of operational changes within PERIODS 9+10 which impacted on Kandahar where Canadian troops are deployed and which, in addition to better air support, may have contributed to the altered fortunes of the Canadians.

It remains starkly the case that, unlike for US military personnel, UK forces have faced major combat throughout the 50 weeks of PERIODS 9+10+11a (that is: fatality rates greater than 6 per 1,000 personnel-years). And substantially worse at **13.6** fatalities per 1,000 UK personnel-years (95% CI: 11 to 16) than in either of the preceding 80-week epochs. We should therefore be thankful for any small consequential or coincidental let-

up in the run-up to UK's parliamentary elections . . . it will have seemed modest indeed to our forces, statistical significance notwithstanding ($p < 0.02$).

Two notes of caution. If we have over-estimated US's deployment to Afghanistan in PERIODS 10+11a, shown as 90,000 personnel, then US fatality rates may be slightly under-estimated thereby; and UK's fatality rate slightly over-estimated if UK deployment were as high as 10,500. Secondly, if the fatality rate of US personnel in Helmand in PERIODS 10+11a were the same as for UK military personnel, then we should have to assume that around 9,000 US troops were deployed to Helmand Province - but correspondingly more if they encounter a systematically lower fatality rate.

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TABLE 1a: Coalition military deaths in Afghanistan and estimated fatality rates per 1,000 personnel-years in consecutive 140-day periods

Theatre	Afghanistan							
Period	1	2	3	4	5	6	7	8
Dates	1 May 2006 to 17 Sept 2006	18 Sept 2006 to 4 Feb 2007	5 Feb 2007 to 24 June 2007	25 June 2007 to 11 Nov 2007	12 Nov 2007 to 30 Mar 2008	31 Mar 2008 to 17 Aug 2008	18 Aug 2008 to 4 Jan 2009	5 Jan 2009 to 17 May 2009
Total fatalities (non-hostile)	117 (41)	40 (4)	96 (27)	114 (16)	59 (10)	136 (20)	123 (6)	102 (13)
US deaths* (troops) personnel-years	54 (23,300) 8,962	18 (22,000) 8,462	50 (24,800) 9,538	58 (25,000) 9,615	25 (31,000) 11,923	88 (35,000) 13,425	53 (35,000 or 31,000 ¹) 13,425	54 (39,000) 14,615
UK deaths (troops) personnel-years	33*** (4,500) 1,726	6 (up to 5,250) 2,014	15 (5,250 to 6K to 6,900) 2,186	22 (6,900) 2,654	8 (7,000) 2,692	24 (8,000) 3,068	24 (8K or 7,300) 3,068	21 (8,000) 3,068
Canadian deaths (troops) personnel-years	17 (2,250) 865	12 (2,250) 865	16 (2,500) 962	11 (2,500) 962	10 (2,500) 962	9 (2,500) 962	16 (2,500) 962	12 (2,500) 962
Other deaths	13	4	15	2	16	15	30**	15
<i>Estimated fatality rates per 1,000 personnel-years (95% Poisson uncertainty)</i>								
US	6 (4.6 to 7.9)	2 (1.3 to 3.4)	5 (3.8 to 6.7)	6 (4.5 to 7.6)	2.1 (1.3 to 2.9)	6.6 (5.2 to 7.9)	4.0 [@] (2.9 to 5)	3.7 (2.7 to 4.7)
UK	19 (13 to 27)	3 (1 to 6)	7 (4 to 11)	8 (5 to 11)	3 (1 to 6)	8 (5 to 11)	8 [@] (5 to 11)	7 (4 to 10)
Canada	20 (11 to 31)	14 (7 to 24)	17 (9 to 27)	9 (3 to 16)	10 (5 to 19)	9 (3 to 16)	17 (9 to 27)	12 (6 to 22)
UK/Canada	19 (14 to 25)	6 (4 to 11)	10 (7 to 14)	8.2 (5.4 to 11)	4.9 (2.9 to 7.8)	8.2 (5.4 to 11)	9.9 (7 to 13)	8.2 (5.6 to 11)
US/UK/Canada	9.0 (7 to 11)	3.2 (2 to 4)	6.4 (5 to 8)	6.9 (5.5 to 8.3)	2.8 (1.9 to 3.6)	6.9 (5.7 to 8.2)	5.3 (4.2-6.4)	4.7 (3.7 to 5.6)

* For PERIODS 1- 4, US deployments were ascertained retrospectively from Department of Defense Active Duty Military Personnel Strengths (309A): with acknowledgement to Olivier Grouille, RUSI.

** includes large cluster of 10 French fatalities in hostile fire

*** large cluster of 14 Nimrod deaths

@ US fatality rate in Afghanistan in PERIOD 7 would be 4.4 (3.2 to 5.6) and UK rate would be 9 (4 to 13) if their troop numbers were 31,000 {and hence 11,923 pys} and 7,300 {and hence 2,808 pys} rather than as shown in Table 1.

TABLE 1b: Coalition military deaths in Afghanistan and estimated fatality rates per 1,000 personnel-years in consecutive 70-day (a) or 140-day periods

Theatre	Afghanistan						
Period	9 UPLIFT	10 SURGE	11a SURGE				
Dates	18 May 2009 to 4 Oct 2009	5 Oct 2009 to 21 Feb 2010	22 Feb 2010 to 2 May 2010				
Total fatalities (non-hostile)	293 (33)	213 (25 ^{11H})	79 (9 ^{4H/A})				
US deaths* (troops) personnel- years	184 (57,000) 21,923	136 (90,000) 34,615	47 (90,000) 17,308				
UK deaths (troops) personnel- years	60 (9,000) 3,462	44 (9,500) 3,654	19 (10,000) 1,923				
Canadian deaths (troops) personnel- years	13 (2,500) 962	9 (2,800) 1,077	2 (2,800) 538				
Other deaths	36	24	11				
<i>Estimated fatality rates per 1,000 personnel-years (95% Poisson uncertainty)</i>							
US	8.4 (7.2 to 9.6)	3.9 (3.3 to 4.6)	2.7 (1.9 to 3.5)				
UK	17.3 (13 to 22)	12.0 (8 to 16)	9.9 (6 to 15)				
Canada	13.5 (7 to 23)	8.4 (4 to 16)	3.7 (0.5 to 13)				
UK/Canada	16.5 (13 to 20)	11.2 (8 to 14)	8.5 (5 to 13)				
US/UK/ Canada	9.8 (8.5-10.9)	4.8 (4.1 to 5.5)	3.4 (2.6 to 4.3)				

11H Total of 25 non-hostile deaths in PERIOD 10 includes 11 US fatalities (7+4) in two helicopter crashes.

4H/A PERIOD 11a includes 4 US fatalities (3+1) in helicopter + aircraft crashes.

TABLE 2 (Iraq): IED (only) fatalities in Iraq

Theatre	Iraq								
Period	Baseline (I)	2	3	4 SURGE	5 SURGE	6 SURGE	7 SURGE	8 SURGE	9 SURGE
Dates	1 Jan 2001 to 17 Sept 2006	18 Sept 2006 to 4 Feb 2007	5 Feb 2007 to 24 June 2007	25 June 2007 to 11 Nov 2007	12 Nov 2007 to 30 Mar 2008	31 Mar 2008 to 17 Aug 2008	18 Aug 2008 to 4 Jan 2009	5 Jan 2009 to 17 May 2009	18 May 2009 to 4 Oct 2009
Duration	260 days	140 days	140 days	140 days	140 days	140 days	140 days	140 days	140 days
Deaths in fatal IED incidents	271 in 183 fatal IEDs	217 in 135 fatal IEDs	280 in 155 fatal IEDs	136 in 86 fatal IEDs	78 in 48 fatal IEDs	62 in 49 fatal IEDs	11 in 10 fatal IEDs	15 in 12 fatal IEDs	21 in 12 fatal IEDs
Number of fatalities in a fatal IED incident									
<i>Fatalities, x, in IED incident</i>	<i>By period: frequency of fatal IED incidents with x fatalities</i>								
1	128	88	97	57	35	39	9	11	7
2	33	23	22	13	4	8	1	0	2
3	14	14	20	12	4	1		0	2
4	5	9	10	3	3	1		1	1
5	3	1	1	1	1				
6+			5		1				
TOTAL fatal IED incidents	183	135	155	86	48	49	10	12	12
Fatal IED incidents per day	0.7	1.0	1.1	0.6	0.34	0.35	0.07	0.09	0.08
Mean deaths per fatal IED incident	1.5	1.6	1.8	1.6	1.6	1.3	1.1	1.3	1.7

There was a single IED (only) fatality in PERIOD 10 in Iraq.

There were three IED (only) fatalities in two IED attacks in PERIOD 11a in Iraq.

TABLE 2a (Afghanistan): IED (only) fatalities in Afghanistan

Theatre	Afghanistan								
Period	Baseline (A)	3	4	5	6	7	8	9	10
Dates	1 Oct 2001 to 4 Feb 2007	5 Feb 2007 to 24 June 2007	25 June 2007 to 11 Nov 2007	12 Nov 2007 to 30 Mar 2008	31 Mar 2008 to 17 Aug 2008	18 Aug 2008 to 4 Jan 2009	5 Jan 2009 to 17 May 2009	18 May 2009 to 4 Oct 2009	5 Oct 2009 to 21 Feb 2010
Duration	1,953 days	140 days	140 days	140 days	140 days	140 days	140 days	140 days	140 days
Deaths in fatal IED incidents	76 in 46 fatal IEDs	22 in 12 fatal IEDs	44 in 27 fatal IEDs	37 in 29 fatal IEDs	62 in 39 fatal IEDs	62 in 42 fatal IEDs	55 in 34 fatal IEDs	136 in 94 fatal IEDs	120 in 89 fatal IEDs
Number of fatalities in a fatal IED incident									
<i>Fatalities, x, in IED incident</i>	<i>By period: frequency of fatal IED incidents with x fatalities</i>								
<i>1</i>	28	8	19	22	25	29	20	71	70
<i>2</i>	11	1	3	6	8	7	9	11	13
<i>3</i>	2	2	3	1	3	5	3	7	3
<i>4</i>	5	0	1		3	1	2	4	2
<i>5</i>	0	0	0					0	
<i>6+</i>	0	1	1					1	1*
TOTAL fatal IED incidents	46	12	27	29	39	42	34	94	89
Fatal IED incidents per day	0.02	0.1	0.2	0.2	0.3	0.3	0.2	0.7	0.6
Mean deaths per fatal IED incident	1.7	1.8	1.6	1.3	1.6	1.5	1.6	1.45	1.35

* Seven fatalities in apparently a single IED incident – the highest per-incident toll in Afghanistan to date.

TABLE 2b (Afghanistan): IED (only) fatalities in Afghanistan

Theatre	Afghanistan							
Period	9+10	11a	11b					
Dates	18 May 2009 to 21 Feb 2010	22 Feb 2010 to 2 May 2010	3 May 2010 to 11 July 2010					
Duration	280 days	70 days	70 days					
Deaths in fatal IED incidents	256 in 183 fatal IEDs	34 in 31 fatal IEDs						
Number of fatalities in a fatal IED incident								
<i>Fatalities, x, in IED incident</i>	<i>By period: frequency of fatal IED incidents with x fatalities</i>							
1	141	28						
2	24	3						
3	10	0						
4	6	0						
5	0	0						
6+	2*	0						
TOTAL fatal IED incidents	183	31						
Fatal IED incidents per day	0.65	0.4						
Mean deaths per fatal IED incident	1.4	1.1						

Consistent with our methodology⁵, excluded from the above analysis of PERIOD 9 are 11 multiply-ascribed IED-related deaths in four IED + small arms fire incidents (2, 1, 2, 1 fatalities) and in three IED + rocket propelled grenade incidents (1, 1, 3 fatalities).