INQUIRY INTO
OPERATION BURNHAM

This presentation is authored by David Napier. David is the owner operator of SKYVUW Limited and has been asked to provide his services as an aerial imagery specialist to the Inquiry.

His background is over 45 years in the wider geospatial industry, predominantly working for NZ Aerial Mapping Ltd. During his 40 plus years tenure with NZAM, he was fortunate enough to be exposed to and trained in the full gamut of disciplines that make up the aerial survey industry. Viewing, processing and analysing aerial imagery of all types from Unmanned Aerial Vehicle (UAV) through to satellite was and still is, virtually a daily exercise for him.

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In terms of the brief for my participation in this Inquiry, utilising commercially available satellite imagery, terrain data and scans of the photographs appearing in *Hit & Run* , I have been asked to comment on;

- The visible extent of damage to the buildings A1 and A3, which are believed to have belonged to the main targets of Operation Burnham, Abdullah Kalta and Maulawi Naimatullah,
- Any visible damage to other buildings,
- The distances between key locations,
- Whether it is possible to identify buildings or places mentioned in *Hit & Run*,
- Statements made by NZDF and Mr Hager at previous hearings, and
- The United States Army AR 15-6 investigation report and Apache helicopter video clips released by the United States under a Freedom of Information Act request by Mr Hager.

For brevity's sake, I have created two documents outlining the initial Data Sources that were used for this analysis and a brief Methodology process, which are available as separate documents on this website.

With reference to Mr Hager's letter to the Inquiry of 19th March 2019, specifically paragraph 6.2, there is now acceptance by NZDF and Mr Hager of the locations of the key buildings A1, A2 and A3, and the Helicopter Landing Zone. Within that same letter, Mr Hager has also accepted that some of the captions of photographs of buildings in *Hit & Run* are incorrect. It is this aspect that will be covered off first.

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Analysis of Photographs

Picture from page 38 of *Hit & Run*

Picture from page 132 of *Hit & Run*

SKYVUW

As Mr Hager has suggested in his letter of 19th March 2019, "two of the photo captions appear to be incorrect – p.39, p.53, - and possibly a third: pp. 38/131 (top) and 132 (bottom)." I concur.

Though cropped differently, photographs 38 and 132 bottom are of exactly the same building. This represents a heavily damaged or neglected building with parts of the rear wall missing and with obviously no roof. As the photograph has been cropped so closely, there is little in the way of geographical features visible to accurately place where this photograph is. There appears to be another building behind this subject, above on the ridge on the sky line but again, there is not enough detail to make a positive identification.

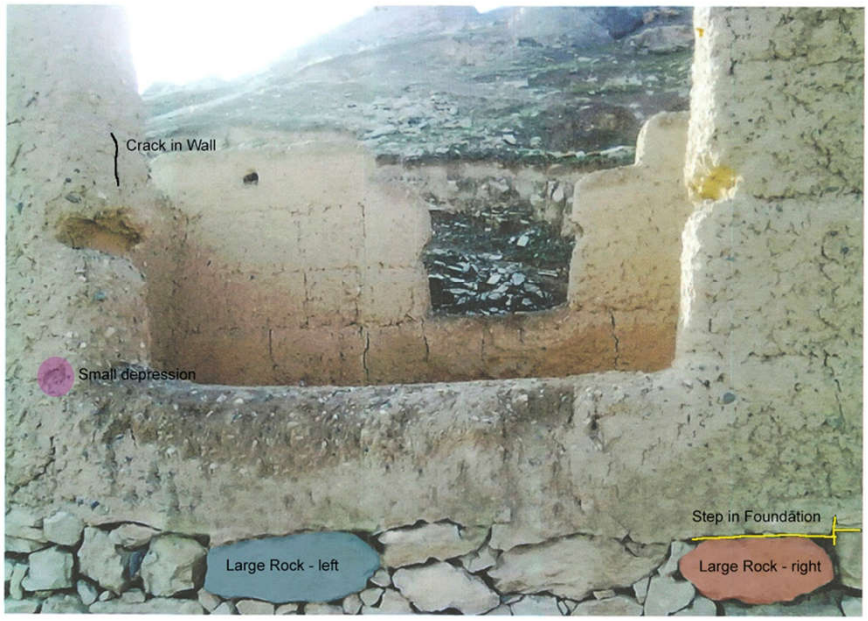
Analysis of Photographs

Picture from page 131 (top) of *Hit & Run*

SKYVUW

The top image in page 131 purports to show a different building in a different location however, it is the same building as shown in the previous two images.

Analysis of Photographs



Picture from page 38 of
Hit & Run

SKYVUW

With reference to photo 38, I have identified a number of common features that appear on this and photo 131 top. The most obvious of these are two large rocks in the foundation, an unusually shaped crack in the window opening and a distinctive depression in the wall.

Analysis of Photographs

Picture from page 131 (top) of *Hit & Run*

SKYVUW

We can now link photos 38, 131 top and 132 bottom to one another.
What interested me further was the large crack appearing on the near end of the building in 131 top.

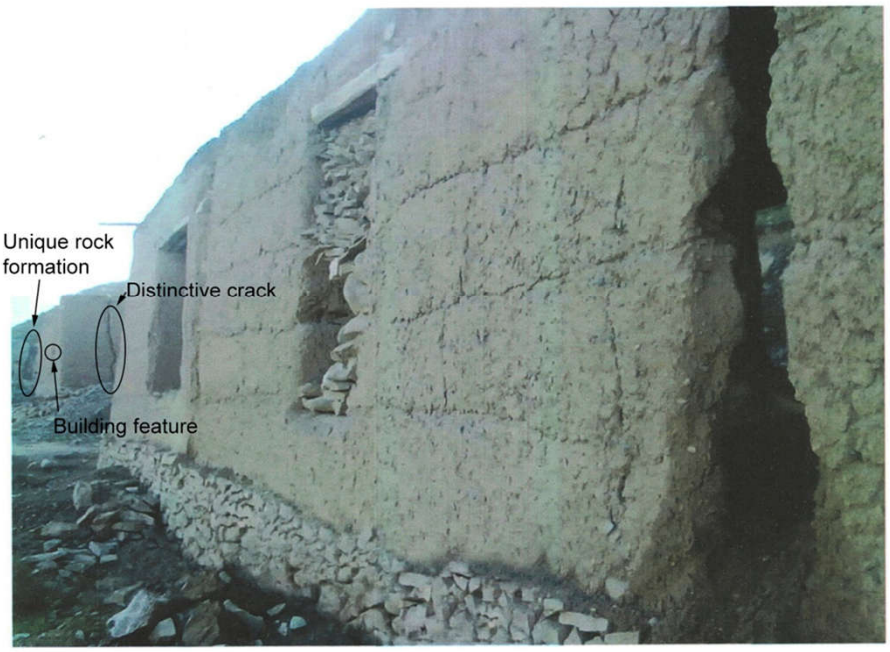
Analysis of Photographs

Picture from page 132 (top) of *Hit & Run*

SKYVUW

When examining photograph 132 top, I noted that a similar crack appeared in the building in the background.

Analysis of Photographs



Picture from page 132 (top) of *Hit & Run*

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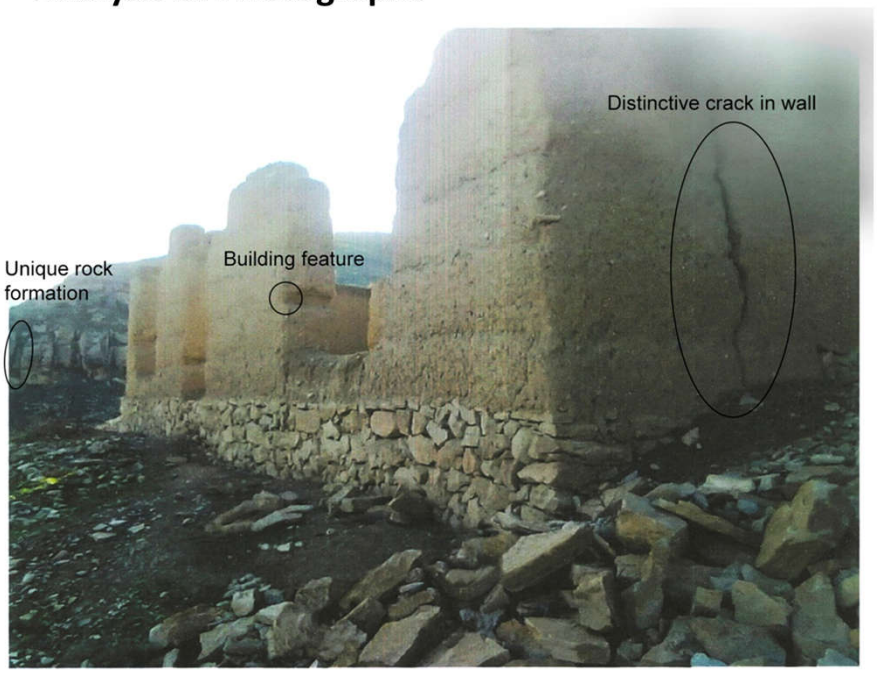
On closer examination, I identified a number of common features that tie these two photographs together.

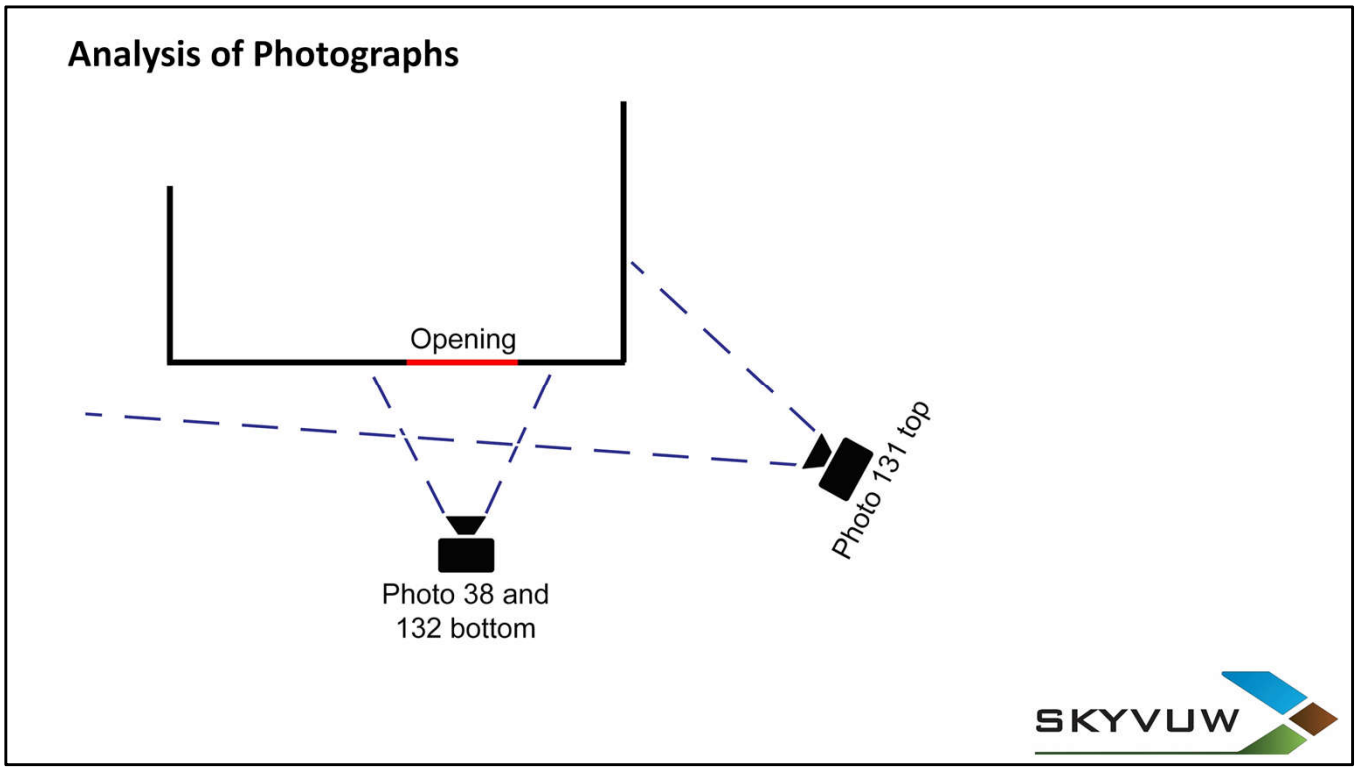
Analysis of Photographs



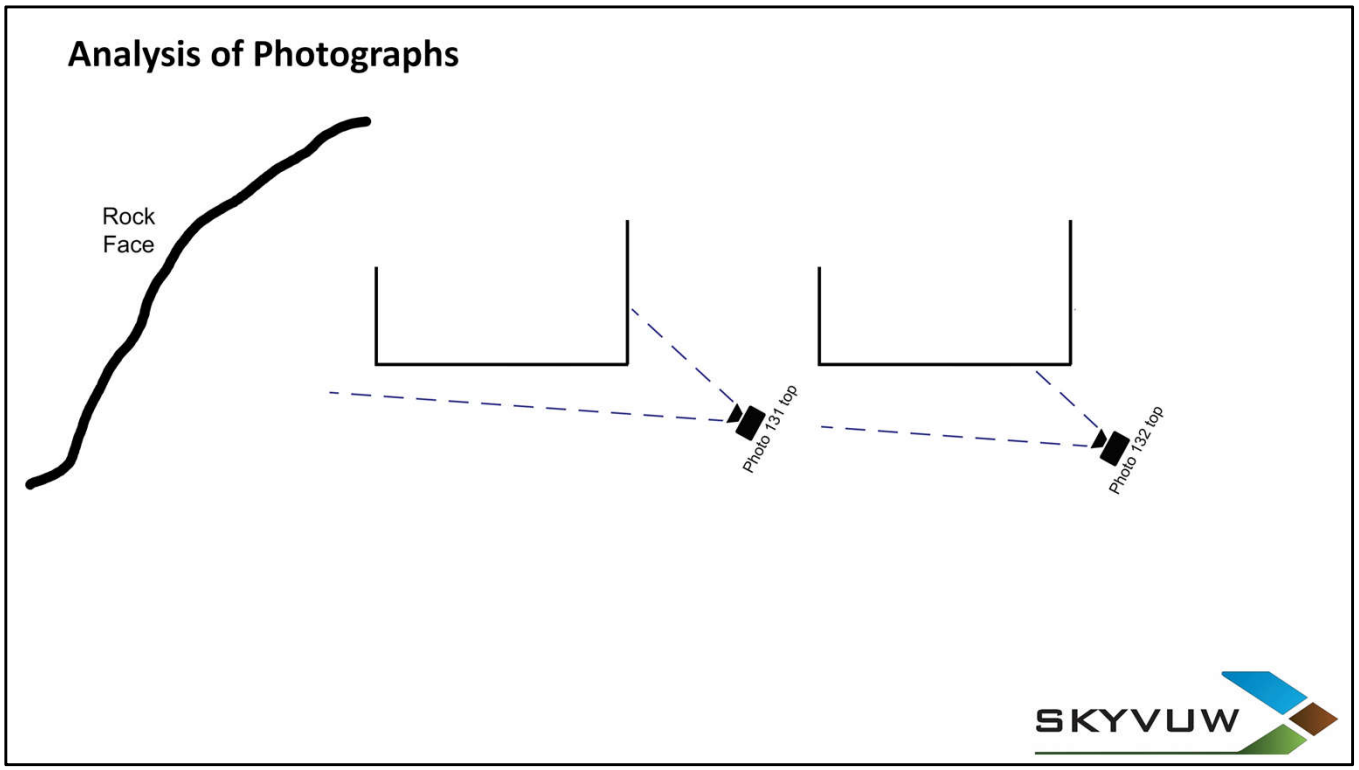
Picture from page 131 (top) of *Hit & Run*

SKYVUW

And those same features on photograph 131 top.



It is my opinion that photos 38/132 bottom and 131 top are taken of the same building as this diagram shows and not two different buildings as claimed in *Hit & Run* .



And the photographs on page 131 top and 132 top, are photographed thus, which shows the relativity between the two buildings.

Analysis of Photographs

Picture from page 131
(top) of *Hit & Run*

SKYVUW

Several questions then arise, where are these buildings and does there appear to be any “explosive” damage to them?
In all the photographs shown, there is a common thread which is the unusual colour of the sand or soil around the buildings. Whereas the predominant colour of the soil in the Operational Area, as defined by the NZDF as a 600m radius about position MGRS 42S VD 23061 91545, is a dun colour, this is definitely black, almost taking on the appearance of black sand.
I have studied the Operational Area in great detail and cannot find a location that shows such ground. Neither am I able to find a grouping of buildings such as these are, particularly when placed against a back drop of such a steep, craggy cliff as appears in the back ground of these images. My only conclusion can be that these two buildings on pages 38/132 bottom and 132 top do not occur within the Operational Area. Where they may be however, is not clear.
With regard the possibility of “explosive” damage, the walls that remain appear to be strong and bare no indications of having had explosives of any sort applied to them. There are no “scorch” marks nor is there evidence of any of the walls being “blown in”.
Of note is the absence of any “sharp corners” on any of the breaches. This would indicate a degree of weathering, making them rounded and relatively smooth. I

am not a specialist on this type of erosion but would assume that weathering of this sort would take some time further suggesting that these buildings have been in this state of disrepair for many years.

Lines of Sight

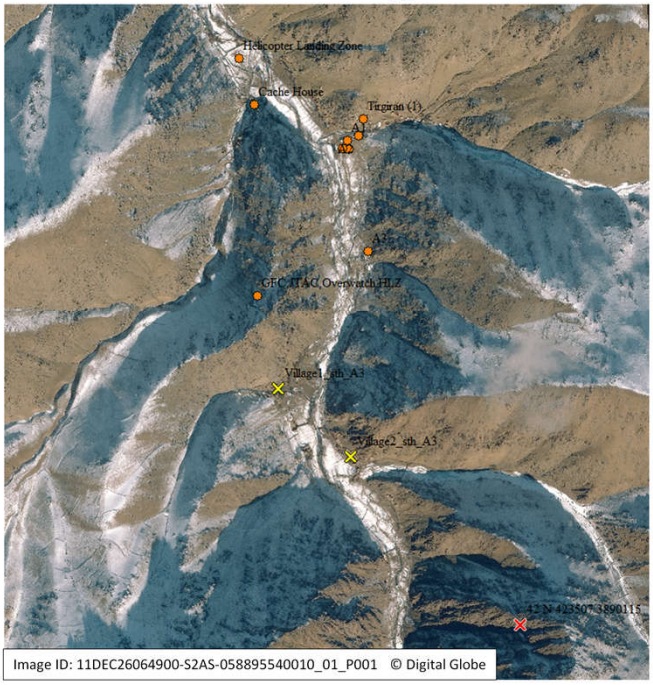
The following lines of sight have all be calculated utilising a Digital Elevation Model (DEM), modelled within the Geographic Information System (GIS) package - Blue Marble, Global Mapper v17.

The DEM data utilised for the Inquiry is a SRTM (Shuttle Radar Topography Mission) derived data set captured by NASA from the Space Shuttle Endeavour and was the most commonly used terrain data set at the time of the alleged raids.

The Shuttle Radar Topography Mission (SRTM) was an international effort that created an almost global data set, missing only the polar regions. Since its capture, many other data sets have been created and have supplanted the accuracy and resolution of the SRTM data set.

As is the nature of this data set, it is available from a broad range of geoportals all over the world and is probably still one of the most widely used, publicly available source of terrain data.

Relationship of following Positions



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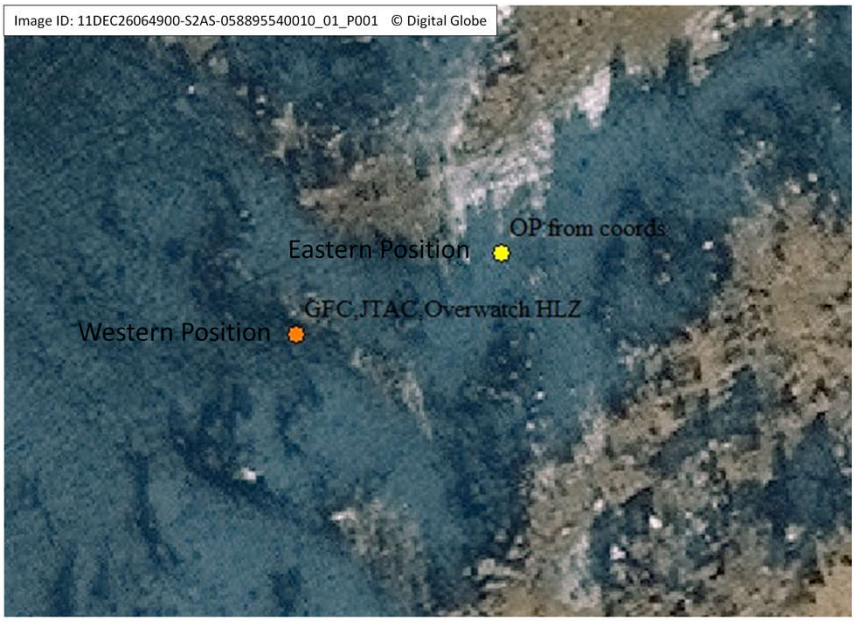
For ease of understanding, this slide shows the relative positions of all the following lines of site.

Location of Overwatch Position



Orange dot is OP position from supplied KMZ file

Yellow dot is plotted from coordinates provided in Colonel Motley's 4th April presentation.

Distance apart = 42m

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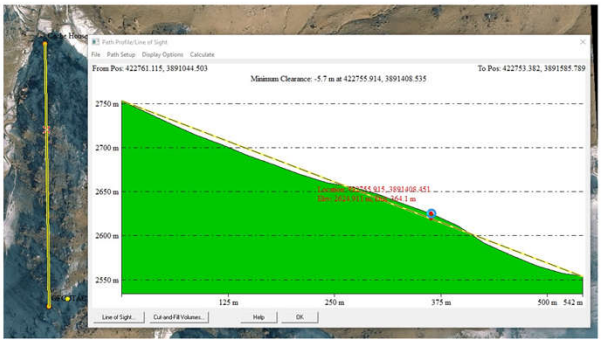
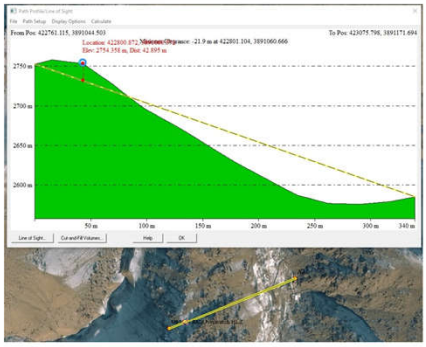
There is a lack of clarity regarding the actual coordinates of the Overwatch Position. A KMZ file, which is the default file type for Google Earth attributes, has been provided to the Inquiry of this position by NZDF. However, that position is in disagreement with the coordinates presented by Colonel Grant Motley on the 4th April 2019.

Colonel Motley provides a position of MGRS 42S VD 2280 9106 for the HLZ for the SAS Ground Force Commander and Joint Tactical Air Controller and other team members. This MGRS position converts to a UTM coordinate of 42N 422800mE x 3891060mN. The coordinates of the KMZ position provided by the NZDF are UTM 42N 422761mE x 3891044mN meaning that the two defined positions for the Overwatch Position are 42 metres apart. This would seem to be minor considering the distances to the positions of the other locations however is very significant in terms of what can and can't be seen from those positions.

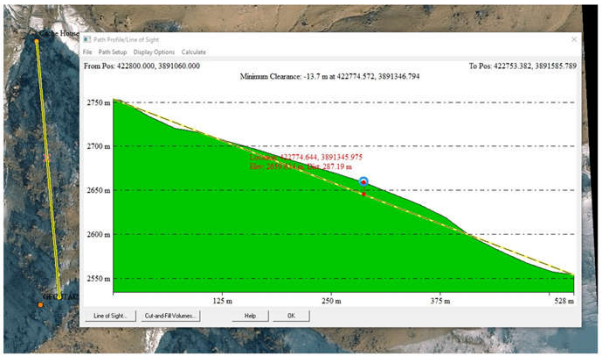
Overwatch Position visibility



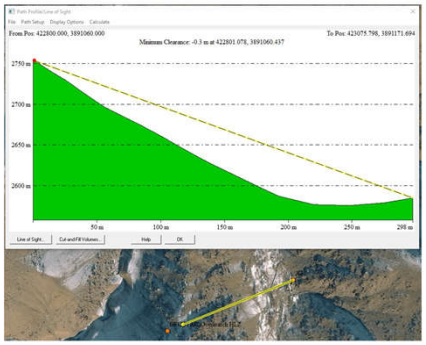
Cache house from western position



A3 from western position



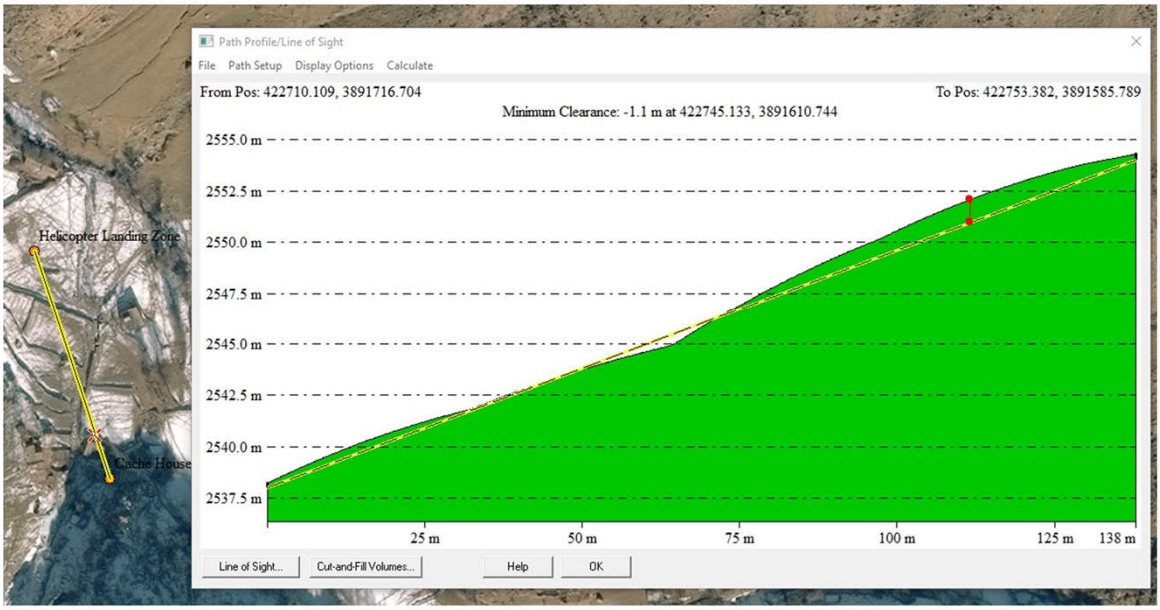
Cache house from eastern position



A3 from eastern position

For instance, from the eastern most position, building A3 can be seen but the building referred to by NZDF as the “Cache House” cannot be whereas, from the western most position, neither A3 nor the Cache House can be seen. Because this position is not known with certainty, I have been unable to analyse the precise distance and lines of sight between the overwatch position and other relevant locations.

HLZ to Cache House



Distance and line of sight HLZ to Cache house

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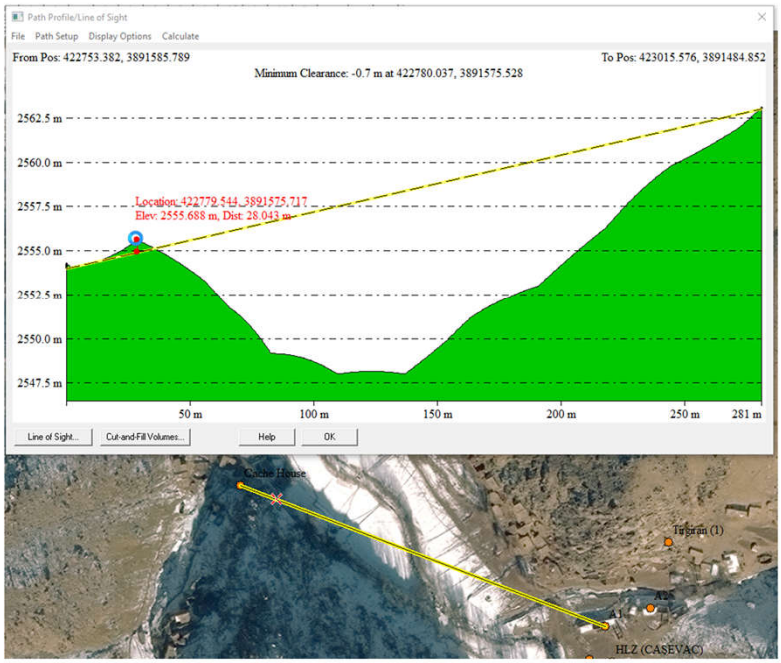
The distance from the HLZ to the Cache House is 138m. As can be seen from the line of sight, the Cache House would be difficult to see directly however, the obstruction is only 1.1m so a standing person being taller than that, will easily see over the small rise in the ground. This means events occurring near the Cache house may have been visible to personnel at the HLZ (depending on other factors such as lighting and any night vision equipment used).

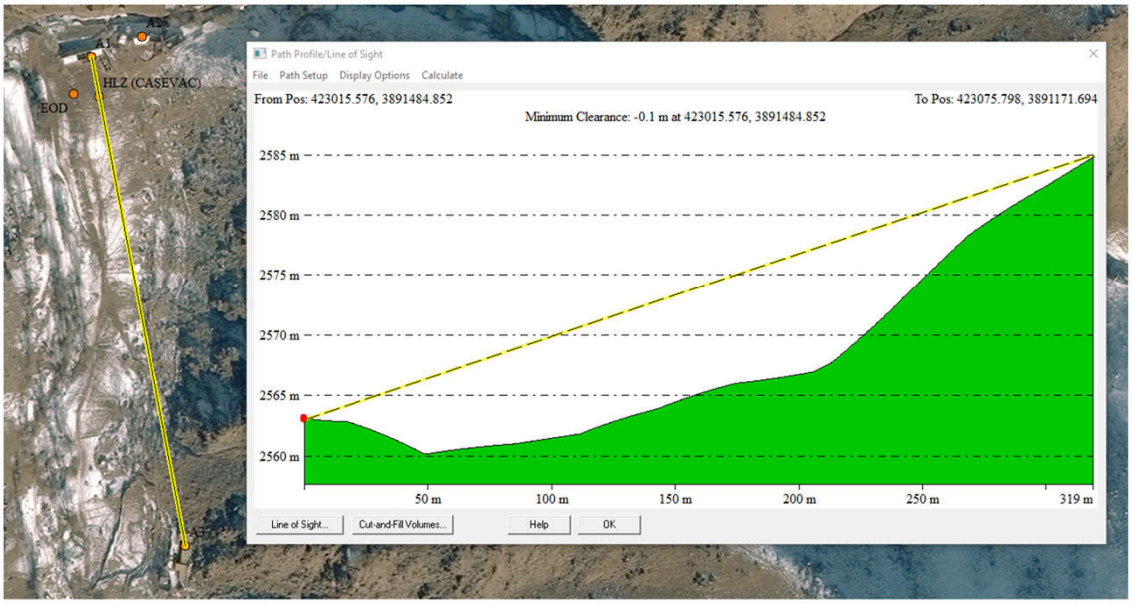
Cache House to A1



Distance and line of sight Cache house to A1

The distance from the Cache House to A1 is 281m and again, has a small rise as an obstruction. As previously, this is a small rise of 0.7m so will be easily seen over.

A1 to A3



Distance and line of sight A1 to A3

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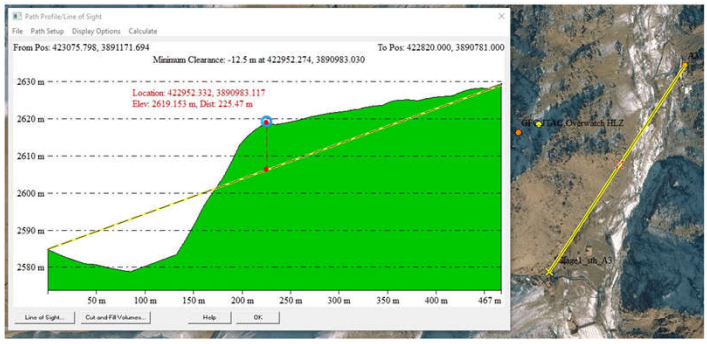
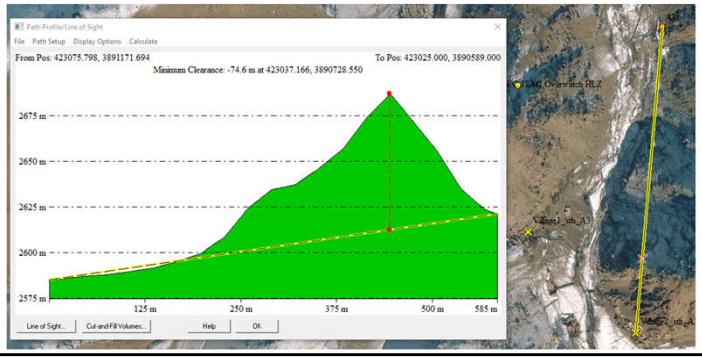
The distance from A1 to A3 is an unobstructed 319m

A3 to Villages 1 and 2



Distance and line of sight A3 to Village 1

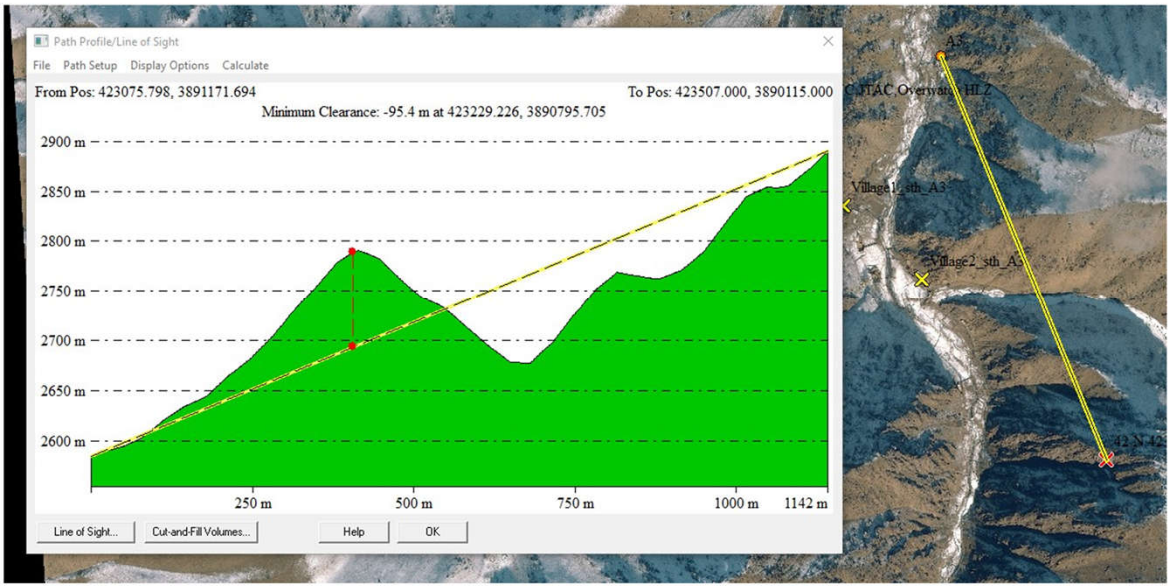


Distance and line of sight A3 to Village 2

With regard the distance from A3 to villages to the south, there are two distinct amalgamations of buildings to the south of A3, Village1 at approximately 42N 422820mE x 3890780mN and Village2 at approximately 42N 423025mE x 3890590mN.

As can be seen by the cross sections, Village One is 467m from A3 and Village Two is 585m. Neither of these villages would be visible from A3.

A3 to Engagement



Distance and line of sight A3 to Engagement

SKYVUW

The engagement to the south of A3 has been defined in the declassified document 02/14 and appears on page 2 at time 220322 local time, at a position of MGRS 42S VD 23507 90115. This position plots at UTM coord 42N 423507mE x 3890115mN shown on the slide as a red cross.

The distance from A3 to the Engagement site is 1,142m and due to terrain, would be impossible to see from A3 and vice versa.

As Mr Hager points out in his presentation of 23rd May 2019, this site is very remote from the "main" area of operations and represents many hundreds of vertical metres of travel.

Location of Building A3

Hit & Run
Page 39

Hit & Run
Page 60

SKYVUW

I will now turn my attention to the Operational Area photographs that appear in *Hit & Run*, with particular emphasis on trying to place them somewhere within that area and discussing what damage, if any, can be assessed from the satellite imagery.

Photographs 39 and 60 depict an "aerial oblique" type view (taken from the air or an elevated position but not looking straight down but rather obliquely to the ground) of the Tirgiran Valley, with photograph 39 looking from approximately North to South and photograph 60 looking from approximately South to North. The foreground of photograph 60, appears in the mid ground of photograph 39 making the alignment of these two images to one another particularly simple.

Location of Building A3

Hit & Run
Page 39

Hit & Run
Page 60

SKYVUW

There are a number of common features that are easily identified in both photographs that I have defined in this slide.
Features 1, 2, 3 and 7 are large rocks that are very easily identified. Feature 8 represents a change in cropping or land use and could easily be a fence line whilst feature 9 is the corner of building.
These features have then been compared with satellite imagery to accurately define the location of the buildings.

Location of Building A3

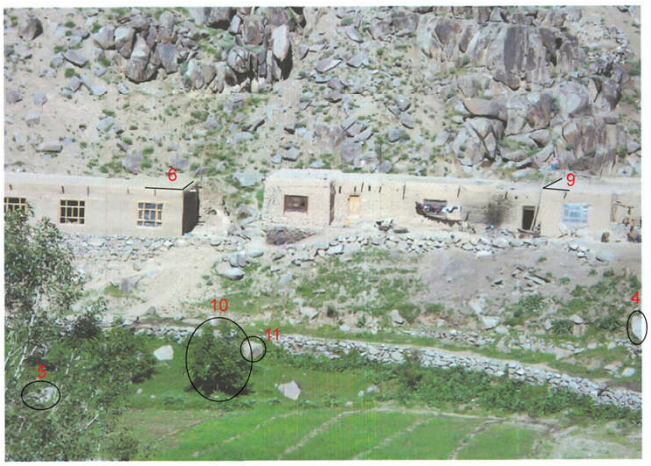
Common features shown on satellite image from 26th December 2011

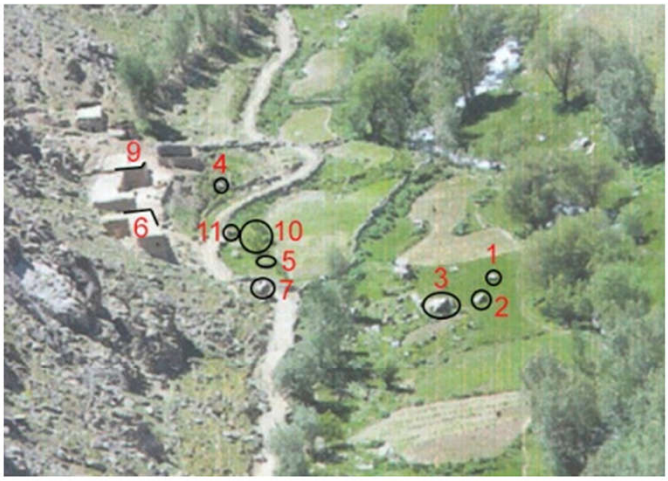
SKYVUW

The common features from both images were readily identified on satellite imagery as shown. Of note is that the common feature "6", the corner of a building that appears on the images in *Hit & Run*, is missing from the satellite image. This shows that the building was not there as of 26th December 2011 and no foundation evidence can be seen on the satellite imagery. This disproves the assertion in the caption for photograph 39 that this building was burnt down and subsequently rebuilt. Satellite imagery shows that the building was not there as late as October 2014 but did appear in images captured in February 2017. Therefore, it appears that this building was constructed sometime between October 2014 and February 2017.

Location of Building A3

Hit & Run
Page 53



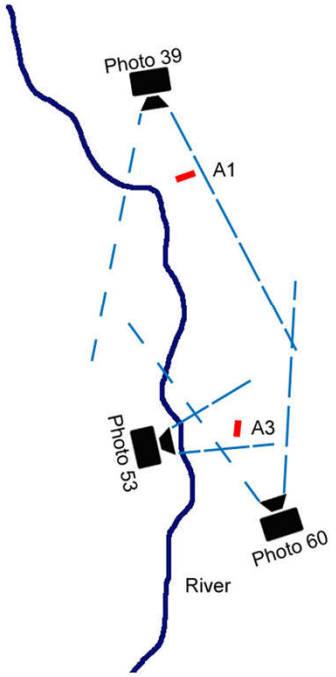


Hit & Run
Page 39

SKYVUW

With reference to the photo on page 53 of *Hit & Run*, utilising the common features identified on photo's 39 and 60, many of these same features can be found on photo 53. Mr Hager's suggestion is totally correct that the buildings to the right of the photo are indeed A3 with the new building on the left.

Location of Building A3

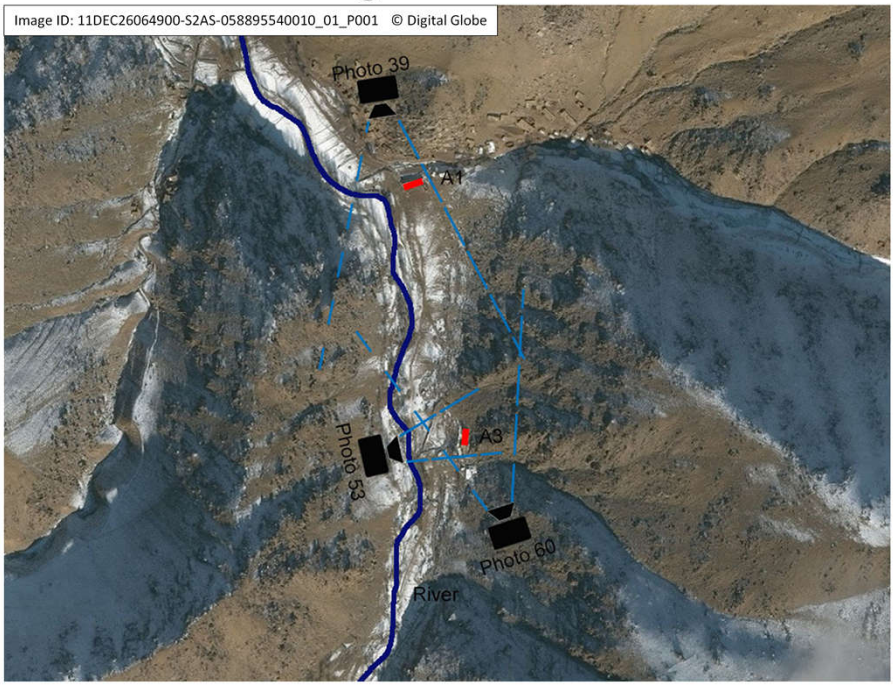


Relative positions of photos 39, 53 and 60

SKYVUW

Looking at the relativity between the three photographs, this slide shows the direction each photo was probably taken.

Location of Building A3



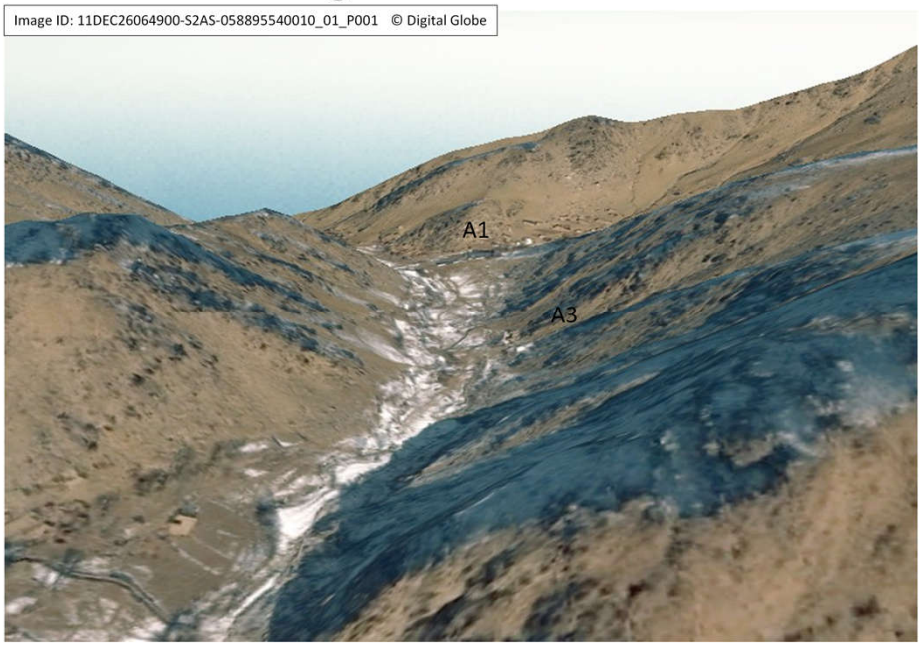
Relative positions of photos 39, 53 and 60

SKYVUW

With the satellite image placed underneath the diagram, it suggests that photos 39 and 60 were taken from hills to the south and north of the valley.

Location of Building A3

Image ID: 11DEC26064900-S2AS-058895540010_01_P001 © Digital Globe



3D view of Tirgiran Valley looking from South to North

SKYVUW

A 3D view from a Geographic Information System (GIS) software package (Global Mapper) tends to corroborate this theory however; a small Unmanned Aerial Vehicle (UAV) or drone could also have created these images. Without having access to the original images to check the metadata, of this I can't be certain though the type of capture bears little relevance to this analysis. The metadata would provide time, camera, lens, shutter speed, aperture and including, if the camera is GPS capable, the GPS coordinates of the camera at the time of exposure.

Damage to Building A3

Part of a 0.5m GSD image captured by World View 1 on 25th April 2010

SKYVUW

With regard visible damage to the building at A3, due to the fact that satellite imagery is vertical, any analysis must rely on damage to the roof of buildings and any other indicators that could point to damage having been recently repaired. This slide shows the small group of buildings taken on 25th April 2010, before Operation Burnham.

Damage to Building A3

Part of a 0.5m GSD image captured by World View 1 on 11th November 2010

SKYVUW

This slide shows the same group taken on 11th November 2010, 81 days after Operation Burnham. There is no visible damage to the roof however, there are certainly different nuances on the roof colour on the southern of the two buildings which could indicate repairs or similar.

Damage to Building A3

Part of a 0.5m GSD image captured by World View 2 on 26th December 2011

SKYVUW

This slide shows the same group of buildings taken on 26th December 2011. As can be seen, the buildings in question have no snow on their roofs yet the building well to the south has a good covering of snow. It is my opinion that due to the lack of insulation in the ceilings and the fact that they will be heated for human habitation, the lack of snow indicates that the heating from the inside is melting the snow on the roof and that the buildings are indeed being lived in whereas the one to the south is probably not.

NZDF have indicated that an “explosive entry method” was utilised to enter the building and that an internal fire was started probably due to a cooking fire getting out of control. If that is the case, the damage must have been minor or completely repaired as evidenced by the satellite imagery which shows an intact roof structure.

Damage to Building A3

Page 79 of the AR15-6 report showing BDA on 31st August 2010

SKYVUW

This slide however clarifies a number of things. This shows a Battle Damage Assessment (BDA) of the group of buildings from the recently released US Army Report AR15-6 with the imagery dated 31st August 2010, just ten days after the raid. This image clearly shows destruction of the roof of the southern-most building of the A3 collective. As has been shown in the previous slides, the building was intact four months before, and was also intact three months after Operation Burnham and one month after Operation Nova, therefore one can only assume that the building was a primary place of residence and with the onset of winter nigh, efforts were made to rapidly repair the structure to make it habitable.

Damage to Building A1 and A2

Part of a 0.5m GSD image captured by World View 1 on 25th April 2010

SKYVUW

NZDF has admitted that A1 was the most damaged due to the methods of entry as well as the fact that destroyed ordinance fell onto the building creating a fire. Indeed, as is reported in a number of the NZDF documents, a soldier was medevac'd from the scene after a wall and roof fell on him when entering A1. There is agreement by NZDF and Mr Hager, that this building and A2 were owned by Abdullah Kalta – known as Objective Burnham, one of the main targets of the operation.

As can be seen in the image in this slide, taken on 25th April 2010 some four months before Operation Burnham, the two buildings are very close being in fact 21m apart. Both buildings appear to be intact and to all intents and purposes, appear to be well maintained and habitable.

Damage to Building A1 and A2

Part of a 0.5m GSD image captured by World View 1 on 11th November 2010

SKYVUW

The image in this slide taken on 11th November 2010, 81 days after Operation Burnham and 38 days after Operation Nova, clearly shows there are two large holes in the roof structure of A1. As can be seen by the shadow cast by A1, the holes appear to be in the middle of the building roughly half way along its east/west axis.

Interestingly, in the 4th April 2019 presentation by Colonel Motley, the NZDF report states that the western wall was breached which then collapsed along with the roof, causing the injuries to an SAS member. The satellite image in this slide, as it is in all the slides presented, shows North to the top, meaning the western wall would be the wall at the left-hand end of the building. Though it is not clear from this image whether the western wall has collapsed or not, the satellite image clearly shows that the western end of the building has an intact roof. Moreover, the long shadows cast by the building indicate that the northern wall of the building is also intact as if it wasn't, sunlight would be shining through the gaps. It is difficult to see if the southern wall is intact but it appears to be. One can only assume then the second entry point that was created was probably somewhere along the southern wall. However, the fire that started in A1 as a result of the ordinance disposal could have precipitated the collapse of the roof as shown.

Damage to Building A1 and A2

Page 81 of the AR15-6 report showing BDA on 31st August 2010

SKYVUW

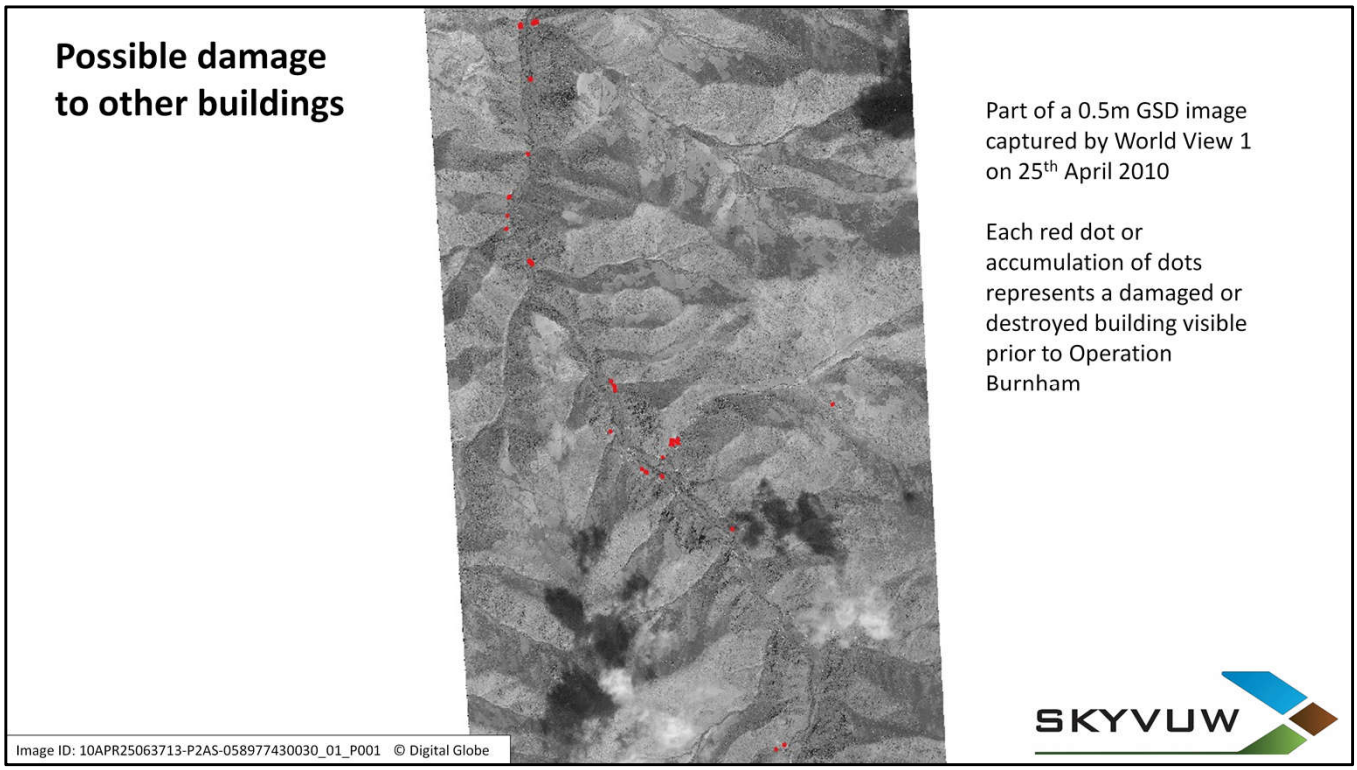
This slide shows page 81 of the material released by the United States under the Freedom of Information Act, which is a Battle Damage Assessment image taken on 31st August 2010. Whilst the heavy shadow cast by the western end of the building makes any damage impossible to see, there appears to be a breach in the southern wall immediately beside the red cross. Whether this was a doorway or a blown entry is unable to be determined however, there is a hole in the wall aligning with the damaged roof. This damage appears to be the same as that shown on the 11th November 2010 satellite image in the previous slide, implying that no further visible damage occurred between those dates. This refutes the assertion by My Hager on pages 80 and 81 of *Hit & Run* that the building was "destroyed" by Operation Nova on 3rd October 2010, 38 days before the previous satellite image was captured.

Damage to Building A1 and A2

Part of a 0.5m GSD image captured by World View 2 on 26th December 2011

SKYVUW

The colour image from 26th December 2011 clearly shows a solid snow cover of the remaining roof of A1 and the whole of A2. Given my previous comment regarding heat escaping through the uninsulated roof and melting the snow on habited buildings, I can only conclude that these two buildings were uninhabited as at the end of 2011. Indeed, the fact that the roof has not been repaired, definitely leads one to that opinion.



Let us consider then, what other damage may be identified from the satellite imagery. *Hit & Run* alleges 12 buildings were destroyed in the raid, six in either village, and some had not been rebuilt.

Of note is that checking through all the available imagery I have, comparing the "before" and "after" images within the Operational Area, they show no buildings other than A1 that display any signs of damage such as holes in their roofs or walls missing. It must be acknowledged that due to the time lag between the operations and the "after" satellite image and the evidence we already have of the speed of repairs carried out on A3, there may have been damage that had been repaired that the imagery simply will not show. However, the lack of damage shown in the 11 November 2010 imagery tends to disprove the allegation in *Hit & Run* (p 61) that some of the houses damaged were never rebuilt or were only partially re-erected.
What did surprise me was the number of building structures that appeared to be either abandoned or at least in an advanced state of disrepair before Operation Burnham occurred. On this image from 25 April 2010 I have identified in red the location of 41 buildings that were in such a state.

Damage to Cache House

Part of a 0.5m GSD image captured by World View 1 on 25th April 2010

SKYVUW

The current slide shows the Cache House before Operation Burnham which shows a neat and intact building. The image is from 25th April 2010.

Damage to Cache House

Part of a 0.5m GSD image captured by World View 1 on 11th November 2010

SKYVUW

Unfortunately, the low sun angle evident in this image taken on 11th November 2010, 81 days after Operation Burnham, means that the majority of the building is in deep shadow. Having carefully viewed this image in a number of viewing packages, my opinion is that it doesn't appear, from this imagery, that there is any major damage to this building. However, as has already been shown by the damage and repair to A3, whatever damage that may have occurred may have already been repaired.

Damage to Cache House

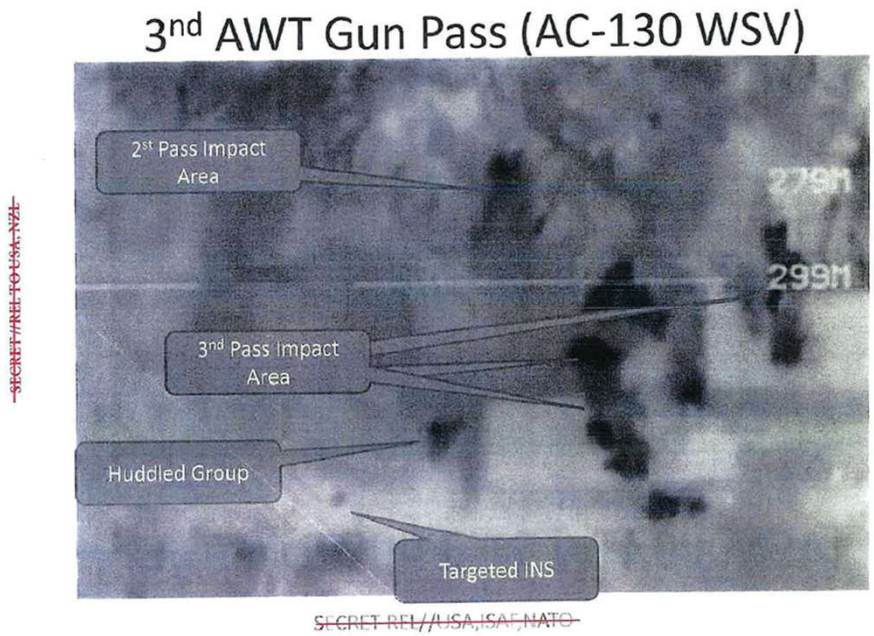
Part of a 0.5m GSD image captured by World View 2 on 26th December 2011

SKYVUW

The colour photo from 26th December 2011 clearly shows that the roof is devoid of snow even though others in the vicinity do have snow on them therefore an assumption can be made that the Cache House is habitable and is indeed being lived in.

With the release of the US Army AR15-6 report and Apache video clips however, a very different picture emerges.

Damage to Cache House



Page 65, Exhibit 17 from the Incident Assessment Team report

SKYVUW

Of main interest to me are the two images in the report, Exhibits 16 and 17, that show shell impacts on or near buildings.
Exhibit 17 purports to show a string of shell impacts, supposedly from an AH-64 Apache helicopter but as viewed from the AC-130.

It was not easy to initially positively identify where this image is of and given that all identifying features in the actual screen shot like time and direction have been redacted, that challenge was even greater.

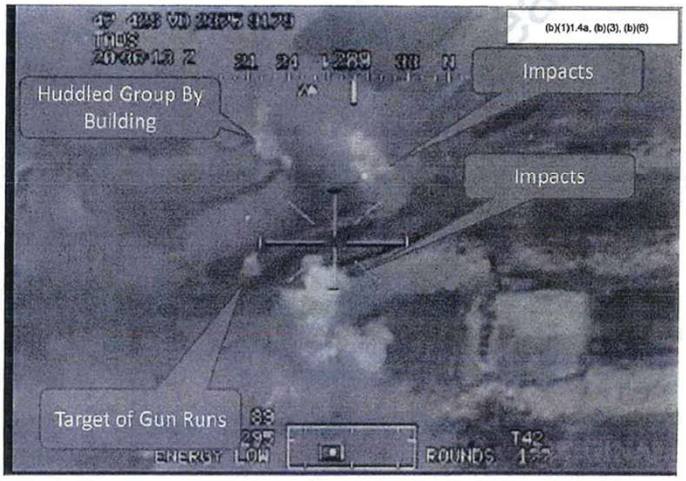
Please note the “huddled group” shown in the screen shot and the position of the “Targeted INS”.

Please also note that the quality of imagery is as it appeared in the report.

Damage to Cache House

3rd AWT Gun Pass (AH-64 WSV)

Angry 22/20:35.138Z



Page 64, Exhibit 16 from the Incident Assessment Team report

~~SECRET REL//USA,ISAF,NATO~~

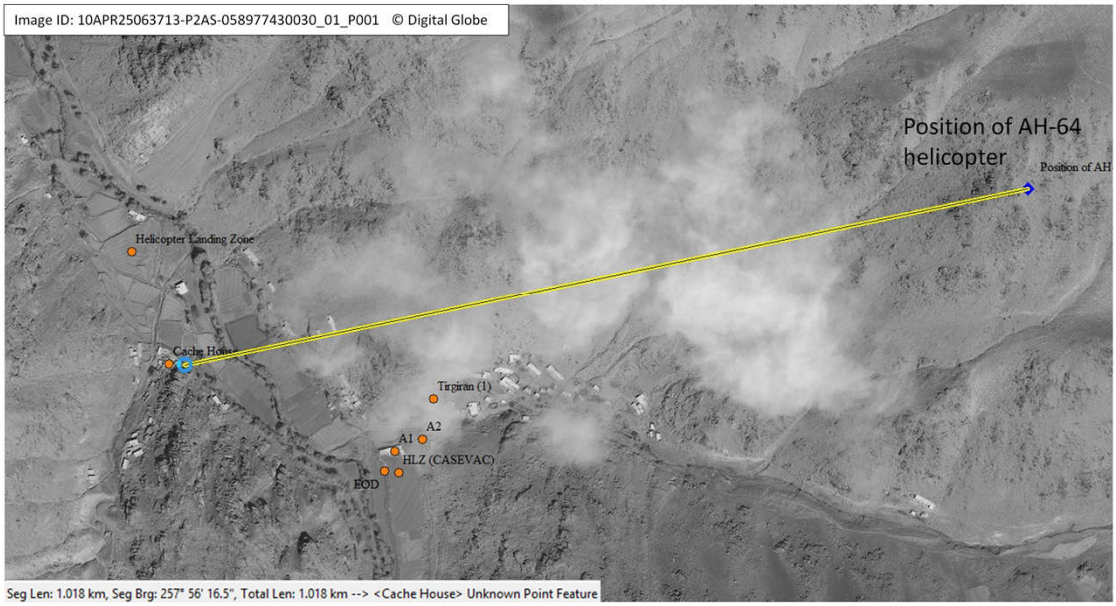
USCENTCOM FOIAs 17-0385, 18-0461, 19-0057L

064 05/21/2019

SKYVUW

This exhibit purports to show the same "gun run" as the previous slide but from the AH-64 perspective, I beg to differ. Please note the position of the "Huddled Group by Building" and the "Target of Gun Runs".
Also note that, unlike all the other images of the gun runs, the screen information has not been redacted which gives us a lot of information.
For instance, the position the AH-64 was at when firing of 42S VD 2375 9179 which equates to UTM 42N 423750mE x 3891790mN. The display also shows that the aircraft was on a heading of 289 degrees magnetic and the gun was aiming on a heading of about 258 degrees magnetic.
We also see the time as 20:36:13Z – not 20:35:138Z as shown in the caption.

Damage to Cache House



SKYVUW

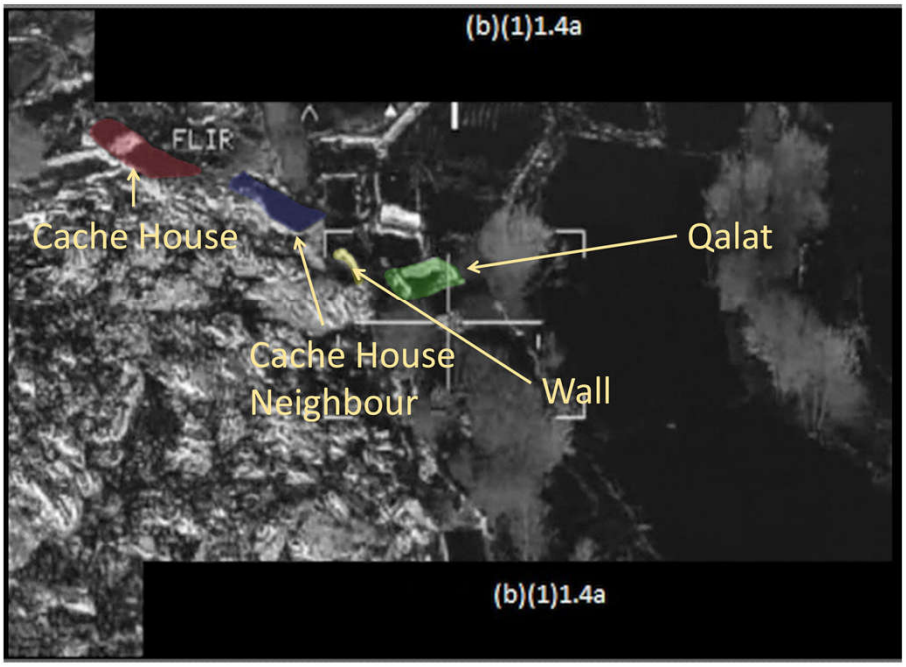
If we plot the positon of the AH-64 Apache helicopter, it plots at the blue diamond shown in the top right of this slide. The yellow line describes a trajectory of exactly 257 degrees, 56 minutes and 16.5 seconds to the Cache House, at a distance of 1.018km away. This fits neatly into the published typical AH-64 engagement range of 800 – 1200m and is almost exactly the bearing as shown on the weapons system.

Firstly though, with reference to the previous slide, let us positively identify the buildings and where they are.

For reference, here is an enlargement of a satellite image of that area with four distinct physical features identified.

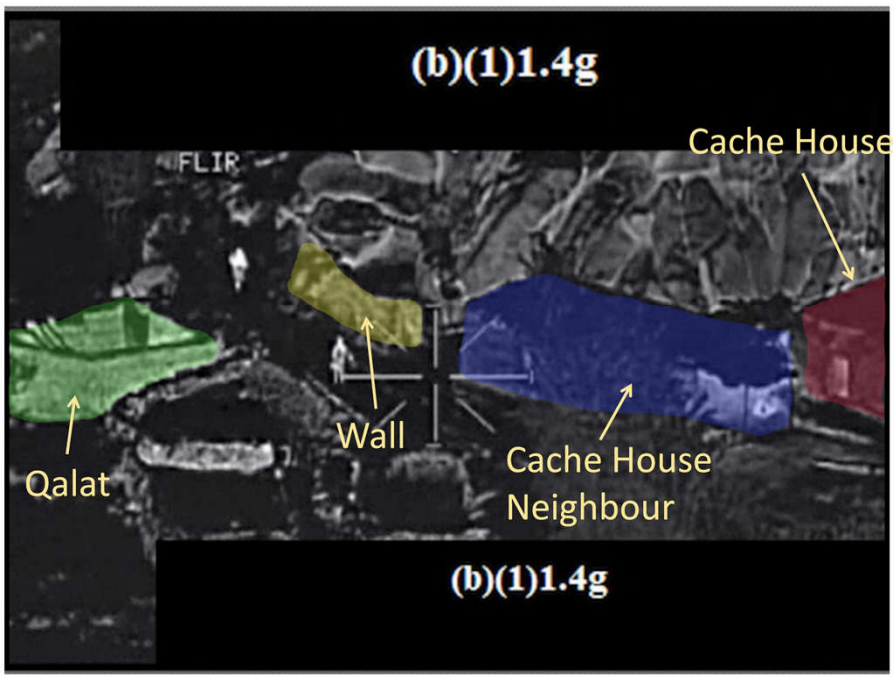
For information, a Qalat is described as a “fortified place” with the term being used to indicate a defensive fortress and is generally a walled area or compound.

Damage to Cache House



If we now look at that same position but through the eyes of the Forward Looking Infra-Red (FLIR) camera linked to the Target Acquisition and Designation Sight (TADS) aiming system, we now get a better understanding of what we are looking at, how it looks through the FLIR camera and how it would appear to the airmen.

Damage to Cache House



SKYVUW

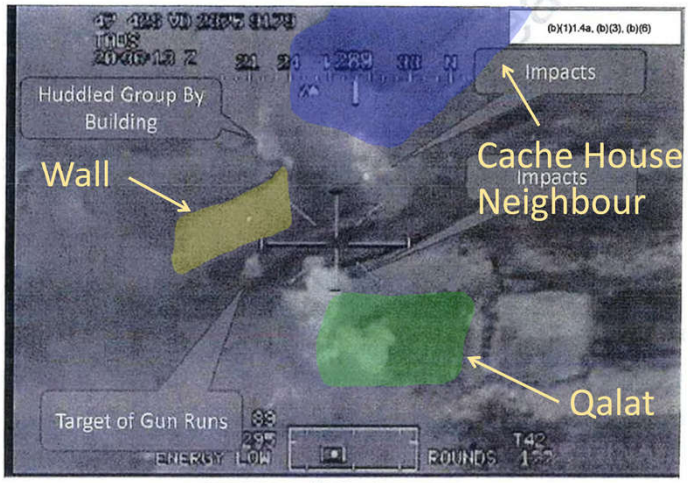
For another perspective of the same area from a different angle, here is another view.

Please note that as in the previous slide, warm objects like a human form and for that matter an exploding shell, will appear as white.

Damage to Cache House

3rd AWT Gun Pass (AH-64 WSV)

Angry 22/20:35.138Z



Page 64, Exhibit 16 from the Incident Assessment Team report

~~SECRET REL//USA,ISAF,NATO~~

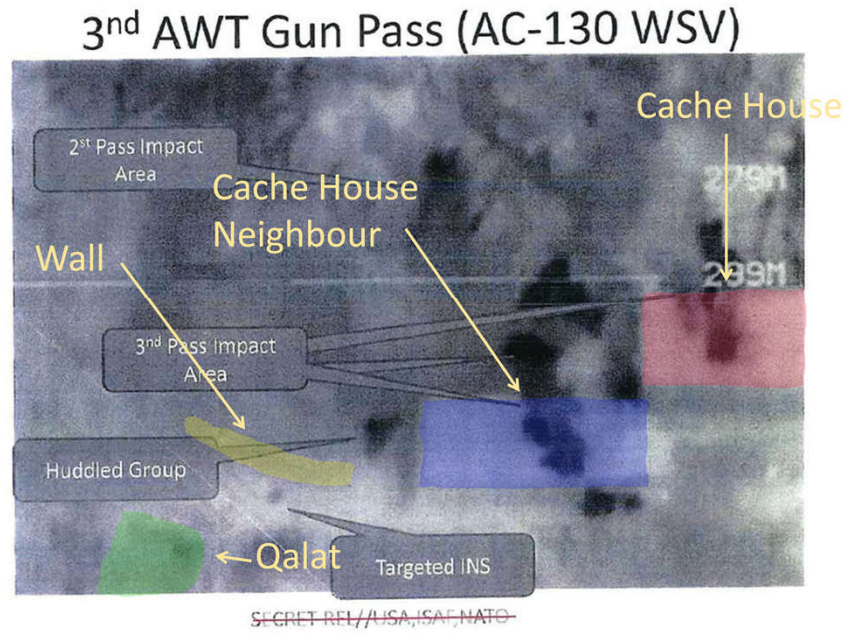
USCENTCOM FOIAs 17-0385, 18-0461, 19-0057L

064 05/21/2019

SKYVUW

With the familiarity of the area established, let's now look again at the 3rd Gun Pass. It can clearly be seen that there is a shell impact on the wall of the Qalat which is well documented in various comments made within the report. There is also an impact close to the back wall of the building neighbouring the Cache House.

Damage to Cache House



Page 65, Exhibit 17 from the Incident Assessment Team report

~~SECRET//REL TO USA, NZL~~

USCENTCOM FOIAs 17-0385, 18-0461, 19-0057L

065 05/21/2019

SKYVUW

Returning to the image in Exhibit 17 of the report, there is no doubt that this image came from the AC-130 system. Note that the "hot" areas are shown as black rather than white and the small nomenclature on the screen is quite different to the AH-64 screen.

In terms of the number and timing of the impacts, note the image is captioned "3nd AWT Gun Pass" and that there are shell bursts labelled "2st Pass Impact Area" and "3nd Pass Impact Area". Based on my analysis of this image and the one in the previous slide, I have concluded they show three passes in total.

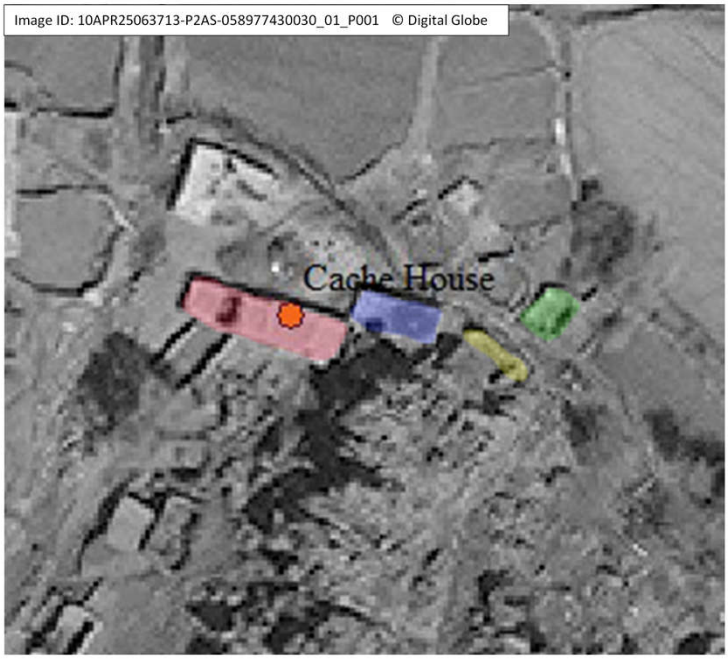
The "Targeted INS" in this image appears to be in almost the same position as the "Target of Gun Runs" in the previous slide. This makes me think that the two persons are the same and therefore the two images represent moments in time that may be merely seconds apart. However, due to the different impact areas, there is absolute certainty that these two images do not show the same guns runs from different perspectives.

Unfortunately, the shell impacts on each image cannot be seen in the other however, with reference to the transcript of the radio traffic, Exhibit 18 of the AR15-6 Report, it appears there were multiple engagements taking place almost at the same time.

My supposition therefore is that this image shows the FIRST (1st) and SECOND

(2nd) gun passes followed very quickly by what was shown in the previous slide, the THIRD (3rd) pass.

Damage to Cache House

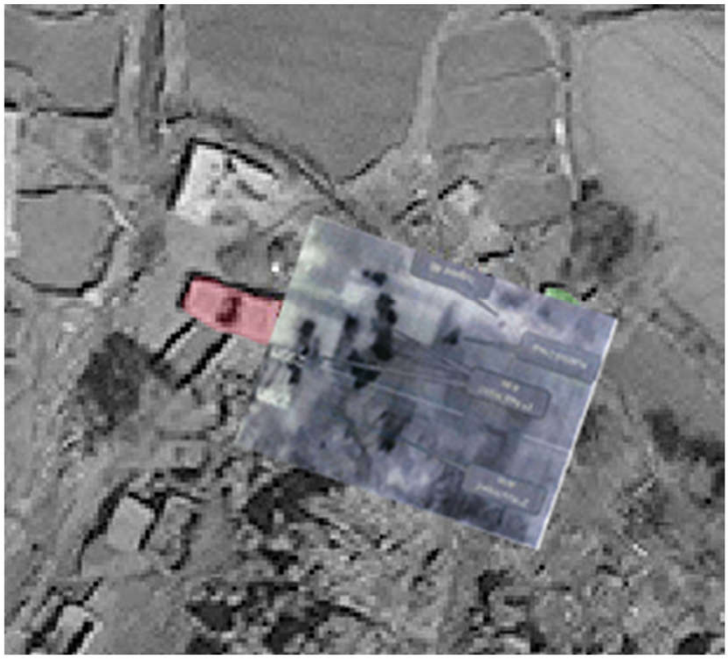


Satellite image from 25th April 2010

SKYVUW

In order to make the placement of those impacts a little more clear, this slide shows the Cache House area on the satellite image but zoomed in as much as possible without pixelating the image too much.

Damage to Cache House

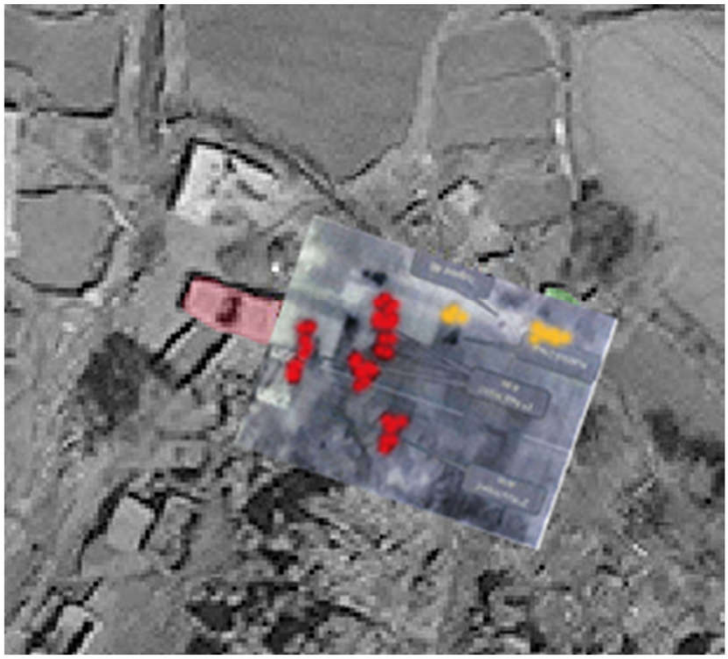


Satellite image with Exhibit 17 superimposed

SKYVUW

With Exhibit 17, scaled and rotated to fit the satellite image, there is no doubt as to where the shell impacts fall, across the back of the Cache House and squarely through the middle of the Cache House Neighbour.

Damage to Cache House

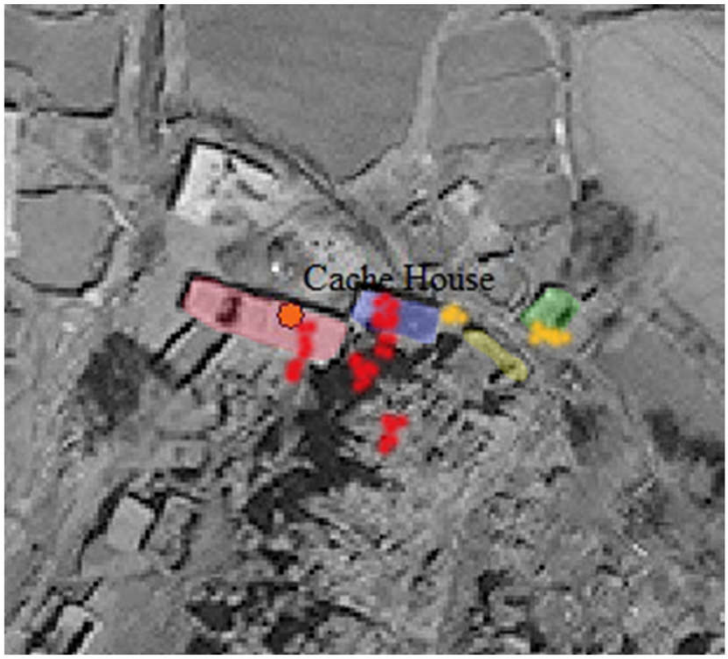


Page 65, Exhibit 17 from the Incident Assessment Team report superimposed on the Satellite image also showing impacts from Exhibit 16.

SKYVUW

To make things easier to see, here are those impacts highlighted in red but also with the added shell impacts that are shown on Exhibit 16 labelled as the Third Pass in orange.

Damage to Cache House



Shell impacts of all three runs shown on a satellite image.

SKYVUW

With Exhibit 17 faded away, the placement is even clearer.
Whichever aircraft fired those rounds, it is clear that there were a number of rounds that struck a building directly and more again that impacted close to buildings and the “huddled group”.

Conclusion

- It is clear that A1, A3, the Cache House and the building neighbouring the Cache House were damaged as part of Operation Burnham. To what extent is not able to be verified from vertical satellite imagery particularly given the time frames between the Operation dates and the capture dates of the imagery.
- As at 11 November 2010, no damage was visible to other buildings in the Operational Area that did not already exist prior to Operation Burnham. It is possible some buildings were damaged during the operation and had been repaired by that date.
- This tends to disprove the allegation in *Hit & Run* that some of the damaged buildings were abandoned and never repaired. While it appears there were a significant number of abandoned buildings in the area, they were already in that state prior to the operation.
- The images of damaged buildings shown in *Hit & Run* do not accurately represent damage caused by Operation Burnham. My analysis suggests the buildings were not located in the Operational Area.
- The available imagery appears to show no further damage to A1 following Operation Nova, even though *Hit & Run* alleges the building was destroyed again during that raid.

SKYVUW

INQUIRY INTO
OPERATION BURNHAM