

INDEX - C

- I. Transcript of Cockpit Communications, 5 Dec 06
- II. Analysis of cockpit video tapes (tape 115 and 116)

Transcript of
Cockpit Communications, 5
Dec 06

C-I

| Transcript of | | |
|---------------|----------------|--|
| TIME | WHO IS TALKING | Cockpit Comm from 5 December |
| CONVERSATION | | |
| 7:43:41 | | All right Lets go button 6 Prime |
| 7:43:50 | | Unreadable comm |
| 7:44:35 | | Ready to copy target |
| 7:44:41 | | Target Grid 1 Elevation is a compound in a set of 3 running North and South |
| 7:44:51 | | copy f elevation compound in a row of three running North South |
| 7:45:03 | | Affirm, in the compound you have a tower also you have a treeline that runs to the west |
| 7:45:17 | | |
| 7:45:52 | | To the west of there's a crater |
| 7:45:55 | | Sounds like its going to be a compound in the center of a compound in the center of a compound that runs north south |
| 7:46:49 | | Do you see those 3 compounds there |
| 7:46:51 | | I see them in the FLIR GPS |
| 7:47:34 | | got those compounds now they appear clear...looks like there's some good work previously |
| 7:47:42 | | roger that |
| 7:48:16 | | It appears in narrow field of view there are 3 bomb craters |
| 7:48:31 | | Affirm in the southern most compound and northern compound there's a crater in the center 1 there's not |
| 7:48:43 | | Problem with my FLIR I can't switch it from to designate |
| 7:48:48 | | O.K. confirm you don't have set up boxed? |
| 7:48:50 | | 1800 hundred and hundred |
| 7:49:00 | | O.K. go to the set up page and hit align |
| 7:50:31 | | (with opening targetgrid ready to copy new Grid) |
| 7:50:45 | | ready to copy x 2 |
| 7:50:56 | | Confirm ready to copy |
| 7:50:58 | | ready to copy |
| 7:51:00 | | PQ elevation 2343 compound, read back |
| 7:51:10 | | PQ elevation compound |
| 7:51:20 | | Roger, need you to run in from west to east or east to west on that TGT |
| 7:51:25 | | Confirm you want the gun on that TGT |
| 7:51:26 | | Affirm once get gun then we'll go bigger |
| 7:51:30 | | Copy |
| 7:52:10 | | Ah, confirm you are familiar with the target |
| 7:53:14 | | Looking for the target now, ah standby one |
| 7:52:45 | | is tally that large compound |
| 7:52:48 | | Roger, I want 1x1000 pounder on that TGT |
| 7:52:53 | | Copy we have GBU12 500'lbs bomb |
| 7:52:56 | | Affirm a GBU12 on that compound |
| 7:52:58 | | Say run in heading |
| 7:53:00 | | East to west or west to east |
| 7:53:06 | | Copy east to west or west to east |
| 7:53:08 | | Roger, call running in on that compound |
| 7:53:20 | | Confirm that large compound has six groups of buildings just to te west of it |
| 7:53:26 | | elevate |
| 7:53:33 | | Say again |
| 7:53:35 | | I'm elevating to your altitude up to one five thousand |
| 7:53:37 | | Copy |
| 7:53:42 | | how soon do you need that bomb I can be in in 1.5 mins from the east and 3 mins from the west |
| 7:53:51 | | Roger, 1.5 mins from the east would be ideal |
| 7:53:54 | | Roger |
| 7:53:56 | | Roger, call tipping in that target |
| 7:54:00 | | |

C-I

| Transcript of | | Cockpit Comm from 5 December |
|---------------|----------------|--|
| TIME | WHO IS TALKING | CONVERSATION |
| 7:54:26 | | would like to come in on a 300 heading the for winds |
| 7:54:30 | | I'm happy with that |
| 7:54:36 | | All right (I'm elevating so steer clear of me |
| 7:54:47 | | Also try and get your diamond on the ground at the position that I'm droppin |
| | | Garbled |
| | | Copy |
| 7:54:54 | | I confirm your run in heading |
| 7:54:59 | | is inbound heading is 300 we're leaving in about 1 mike |
| 7:55:05 | | Roger, you are cleared hot onto that target |
| 7:55:07 | | |
| 7:55:16 | | I will be using instantaneous fuzing |
| | | Roger happy |
| 7:55:20 | | Garbled |
| 7:55:53 | | In from the south east |
| 7:55:56 | | you are cleared hot onto that TGT |
| 7:56:11 | | And call when you have released stores |
| | | FIRST GBU-12 ATTACK BY |
| 7:56:12 | | One away |
| 7:56:22 | | call when you release stores |
| 7:56:23 | | One away |
| 7:56:50 | | I r this is ' , gonna reattack on the northern edge (repeat) of that compound with guns east to west |
| 7:56:58 | | I be coming in from the west |
| 7:57:07 | | Roger, call when your tipping in |
| 7:57:08 | | Wilco |
| 7:57:16 | | r that needs to the northern edge of that compound not ah--north western end there's a tower ah need you to strafe that one |
| 7:57:27 | | Strafe the north western edge the tower |
| 7:57:31 | | Affirm strafe the north west edge to get it |
| 7:57:34 | | Copy |
| 7:57:47 | | You cleared hot on that target I'm happy with that whenever you're ready |
| 7:57:58 | | Got the target |
| 7:58:26 | | Be ready with the gun brother |
| 7:58:29 | | In |
| 7:58:32 | | copy I'm happy with run in or you copy TGT |
| 7:58:35 | | understand you want me to come in? |
| 7:58:41 | | Roger, hit that target whenever you want |
| | | FIRST STRAFE ATTACK ON NW CORNER OF COMPOUND |
| 7:58:50 | | will be a reattack from the east to the west in about 1 minute |
| 7:58:56 | | Roger, you're cleared hot on that TGT |
| 7:58:58 | | (switches to the HUD) |
| 7:59:20 | | Inaudible comm Between I |
| 7:59:56 | | call from other player altitude altitude |
| 8:00:02 | | Other player call |
| 8:00:10 | | Inaudible |
| 8:00:14 | | did you strafe the northern edge? |
| 8:00:17 | | I affirm the northern edge was strafed... just got the corner of the tower there |
| 8:00:28 | | Roger, was happy with that ready immediate reattack on that position, however, its gonna be a slightly different position than that different grid are you ready to copy |
| 8:00:31 | | ready to copy |
| 8:00:48 | | Roger, grid tower and they are from that location |
| 8:00:56 | | I base of the tower |
| | | Roger, that's spot on your cleared hot on that target with a 500lbs |

C-I

| Transcript of | | Cockpit Comm from 5 December |
|---------------|----------------|--|
| TIME | WHO IS TALKING | CONVERSATION |
| 8:00:58 | | |
| 8:01:00 | | O.K. get that into your system you're gonna drop and I'm gonna lase |
| 8:01:20 | | Did you copy grid (stepped on by |
| 8:01:21 | | 450 |
| 8:01:22 | | call when your happy with that |
| | | (inaudible comm for 3 sec) |
| 8:01:30 | | My wingman is pretty junior he'll be dropping, I'll be lasing, he's having some trouble with his system it'll take 3.5 minutes to about 4 minutes to get this bomb on target |
| 8:01:40 | | say again? |
| 8:01:41 | | My wingman is going to be dropping the bomb I'm going to be lasing, its gonna be 4.5 to 5 minutes to get that tower taken out |
| 8:01:49 | | Roger, happy with that to get that position take out |
| 8:01:56 | | |
| 8:01:58 | | Roger, I'll be give me a shout if you need me |
| 8:02:02 | | |
| 8:02:10 | | Inaudible 1 second of comm |
| 8:02:13 | | Lets switch TAD |
| 8:02:19 | | (Aux) t |
| 8:02:25 | | (Aux) |
| 8:02:26 | | (Aux) Yeah bring it into right hand turn and flow out to the west, I'm sorry keep it coming left flow out to the west flow 270 |
| 8:02:33 | | Two |
| 8:02:41 | | target that position |
| 8:02:48 | | talking my wingman onto that position now |
| 8:02:55 | | Deploy (inaudible 2 sec comm) |
| 8:03:24 | | (Aux) Are you up? |
| 8:03:26 | | (Aux) Yeah what's up brother |
| | | (Aux) What altitude are you at? |
| 8:03:30 | | (Aux) Fifteen thousand |
| 8:03:37 | | (Aux) Still blind |
| 8:03:40 | | (Aux) O.K. did you get that point into your system |
| 8:04:02 | | It appears that building is the western most building on the edge of that crater just to the north west of it |
| 8:04:10 | | Inaudible 1355 (starts in aux switch to the KY) 43 5 |
| 8:04:15 | | Affirm |
| 8:04:17 | | Inaudible for 3 secs |
| 8:04:22 | | |
| 8:04:48 | | (Aux) All right I'm at your 5 o'clock two miles. I need you to select CCIP, TDC to the HUD select the your gonna drop I'm gonna Lase |
| 8:05:02 | | (Aux) CCIP selected t |
| 8:05:05 | | (Aux) Bring it back around to a right hand turn |
| 8:05:13 | | (Aux) visual is your right 3 o'clock a little low |
| 8:05:19 | | turning inbound we have bomb on target in 1.5 minutes |
| 8:05:29 | | give me a release call |
| 8:05:35 | | (Aux) I got lead on the right |
| 8:05:39 | | (Aux) Copy lead on the right |
| 8:06:07 | | (Aux) Confirm master arm on |
| 8:06:09 | | (Aux) Master arms on |
| | | FIRST ATTEMPT AT BUDDY GUIDE GBU-12 |
| 8:06:16 | | (Aux) 30 seconds |
| 8:06:20 | | (Aux) Gonna elevate a little bit |
| 8:06:35 | | 1 sec in audible com |
| 8:06:38 | | |
| 8:07:03 | | (start in aux) alright (inaudible 1 sec comm) |

C-I

| Transcript of | | Cockpit Comm from 5 December |
|---------------|----------------|--|
| TIME | WHO IS TALKING | CONVERSATION |
| 8:07:10 | | (Aux) Flow back right |
| 8:07:12 | | Yeah we miss that one, we're gone flow back around, we'll have bomb on target in 1 min and 20 secs |
| 8:07:13 | | and call when you release stores |
| 8:07:18 | | WILCO |
| 8:07:21 | | (Aux) Code 1581 set |
| 8:07:26 | | (Aux) Roger |
| 8:07:37 | | (Aux) Yeah, sorry brother missed that release couldn't get the target acq (acquisition) |
| 8:07:40 | | (Aux) No Problem |
| 8:07:41 | | (Aux) Thanks for working with me, I can't believe my FLIR fricken died just now |
| 8:07:42 | | All good |
| 8:07:59 | | (Aux) O.K. ready to bring it inbound? |
| 8:08:00 | | I'm ready |
| 8:08:12 | | (Aux) Arm time of 10 seconds is fine correct? |
| 8:08:19 | | say time on target |
| 8:08:21 | | inbound releasing in 30 secs |
| 8:08:23 | | Inaudible 1 sec |
| 8:08:25 | | Confirm we are cleared hot on a 090 run in heading |
| 8:08:29 | | You're cleared hot on target |
| 8:08:38 | | You're cleared hot, call when you release stores |
| | | SECOND ATTEMPT TO BUDDY GUIDE GBU-12 |
| 8:08:53 | | (Aux) standby 3, 2, 1 one away |
| 8:09:00 | | one away |
| 8:09:04 | | (Aux) Didn't come off should I have mode manual selected? |
| 8:09:09 | | (Aux) Damn it, didn't come off? |
| 8:09:11 | | (Aux) negative I've got armed |
| 8:09:14 | | (Aux) flow out back 270 |
| 8:09:16 | | O.K. the bomb did not come off his gonna try one more time |
| 8:09:22 | | (Aux) flow 270 |
| 8:09:25 | | (Aux) No Problem |
| 8:09:26 | | flow 270 brother confirm you do have the arm on |
| 8:09:31 | | rodger, confirm you're gonna try another one |
| 8:09:34 | | Yeah affirm |
| 8:09:38 | | 83 Roger call call |
| 8:09:40 | | Yeah, we'll come back around, I'll be lookin for one more clearance should get it off this time |
| 8:09:43 | | Roger |
| 8:09:49 | | (Aux) can I drop it in manual? |
| 8:09:51 | | (Aux) yeah, you sure can ah did you have TDC to the HUD |
| 8:09:58 | | (Aux) TDC to the HUD |
| 8:10:00 | | (Aux) O.K. you can go manual or CCIP whatever you're comfortable with |
| 8:10:04 | | (Aux) O.K. sorry about that I don't understand what happened |
| 8:10:09 | | (Aux) It's O.K. brother |
| 8:10:22 | | (Aux) I'm ready whenever you are |
| 8:10:23 | | (Aux) O.K. |
| 8:10:36 | | (Aux) I got tons of fuel |
| 8:10:38 | | (Aux) O.K. lets come back around to the right |
| 8:10:44 | | confirm turning |
| 8:10:48 | | Bomb will be off in about 40 secs |
| 8:10:50 | | copies 40 secs |
| 8:10:58 | | We'll be on a 110 heading |
| 8:11:00 | | I'm happy with that |
| 8:11:02 | | |
| 8:11:09 | | you are cleared hot on that target call when you release |
| 8:11:16 | | (Aux) turn to the TGT |

| Transcript of " Cockpit Comm from 5 December | | |
|--|----------------|--|
| TIME | WHO IS TALKING | CONVERSATION |
| 8:11:20 | | (Aux) confirm master arm on and TDC to the HUD |
| 8:11:24 | | (Aux) master arms on TDC to the HUD |
| 8:11:25 | | (Aux) All right tuck it in a little bit |
| 8:11:35 | | (Aux) Ten seconds |
| | | SUCCESSFUL BUDDY GUIDE OF GBU-12 (3RD ATTEMPT) |
| 8:11:41 | | (Aux) 3, 2, 1 release |
| 8:11:45 | | (Aux) One Away |
| 8:11:46 | | One Away |
| 8:11:49 | | Roger |
| 8:11:52 | | Altitude |
| 8:11:53 | | Altitude |
| 8:12:00 | | confirm release stores |
| 8:12:01 | | (Aux) One Away affirm |
| 8:12:35 | | (Aux) Did it hit |
| 8:12:37 | | (Aux) Affirm |
| 8:12:39 | | what effects? |
| 8:12:43 | | Yeah, delta hotel on that Target. Remain in the over head and I will talk you onto your target |
| 8:12:58 | | Copy, still has 1xGBU 38 JDAM on board each airplane armed with air burst ability and gun as well |
| 8:13:01 | | Roger |
| 8:13:12 | | (Aux) Well done t |
| 8:13:15 | | (Aux) Wish my FLIR was working |
| 8:13:17 | | (Aux) O.K. shut it off, leave it off for 1 minute then bring it back to standby for 3 minutes, then turn it on |
| 8:13:23 | | (Aux) Copy |
| 8:13:34 | | is going to send my wingman to get gas I'm going to stay on station with you |
| 8:13:41 | | (Aux) All right I gotta kick you out to go get gas brother |
| 8:13:43 | | (Aux) O.K. roger |
| 8:13:45 | | (Aux) Say your state? |
| 8:13:48 | | (Aux) Six point five |
| 8:13:50 | | (Aux) O.K. I'm actually below you |
| 8:13:52 | | 1 |
| 8:14:03 | | copy I've got a new target for you |
| 8:14:08 | | ready to copy |
| 8:14:09 | | From that last position where you dropped that last five hundred pounder if you go south about 50m there's a tree line that shoots off to the west call contact |
| 8:14:23 | | contact |
| 8:14:25 | | Roger, need you to strafe that target |
| 8:14:31 | | Any particular area or just all along that ridgeline to the south of the last target |
| 8:14:38 | | South of that last target there's a tree line that runs off to the west about 200 meters you've got that tree line to strafe onto the building |
| 8:14:49 | | Copy, strafe from the west to the direct south of that building |
| 8:14:52 | | BINGO |
| 8:14:53 | | BINGO |
| 8:14:55 | | Widow 83 Copy the tree line just slightly to the west of that building |
| 8:15:01 | | Copies |
| 8:15:10 | | (Aux) Do you want me to stay with you or take off |
| 8:15:12 | | (Aux) Negative stick with me and fall in trail and correct off my hits with the gun |
| 8:15:16 | | (Aux) Roger that |
| 8:15:18 | | (Aux) Bringin it down we're gonna do the an eleven thousand foot pattern (BINGO) (BINGO) I'm sorry ten thousand, I come on the gun probably about fifty seven to fifty three hundred |
| 8:15:27 | | (Aux) Got it |

Analysis of cockpit video tapes
(tape 115 and 116)

C-II

Analysis of cockpit video tapes (tape 115 and 116)

The aircraft recording begins during the flight coming off the tanker at the beginning of their mission. After approximately 3 minutes the recorders are secured. They are turned back on at 0743:41(Z) and remain on for the remainder of the incident until after the check fire call. Based on the ensuing communication, I think that had just been told to standby to copy grid on a position to "investigate". The word "investigate" was written on his in-cockpit kneeboard card used to take mission notes referencing this 8 digit grid coordinate.

Before inputs the target grid, the FLIR is clearly pointing at the friendly position. This is consistent with both the statements of the pilot and JTAC that friendly coordinates had previously been passed, he used the FLIR to localize in conjunction with a talk-on by the JTAC.

points his sensors at the area to investigate and remains with this task for approximately 7 minutes. During this time takes about 4 minutes of this time to talk his wingman on to the target area.

There is a period of time when the tape recording the Left DDI goes blank. This is likely due to an incorrect selection. It would appear that HUD record was intended which requires the switch to move through one more detent. Instead it stopped on Right DDI which was already being recorded and the aircraft is mechanized to not allow double recording of the same source. He does correct the error prior to ordnance delivery which is consistent with community practice of checking the recorder settings as a part of a pre-drop checklist.

The JTAC passes new tasking in 8 digit grid once again initially calling for strafe then calling for the GBU-12. has to re-enter the coordinates once before getting FLIR acquisition. He does some target confirmation communication with the JTAC, checks the winds, finds out they are 300 at 38 knots and gets permission to run to the NW. Receives "cleared hot onto that target" about 1 minute prior to release.

Artillery impacts in the southwest corner of the same compound were noted approximately 10 sec prior to weapon release. Laser designation and support was per tactical standards, but the GBU-12 still fell approximately 20 meters short.

The JTAC calls for an immediate re-attack on the same compound using the gun. receives a "cleared hot on that target" almost immediately and about 1 1/2 minutes before he rolls in and receives a second "cleared hot on that target" 30 sec prior to roll-in. He brings up the appropriate displays on the Left DDI and verifies the settings on the gun.

He begins his roll-in from
The strafe delivery he briefed was to roll-in at and

He kept the target designation diamond in the HUD until after rolling out from the dive and aligning the aiming reticle. He pulled the trigger at

which resulted in a slant range of with no
He positively moved the pipper during the firing run and completely covered the

intended target. The trigger was released at [redacted] Post delivery he looks at the strafed area for any effects. There is a smoke plume coming from the NE corner of the compound noted on the [redacted] ape, that seems too significant in size to be consistent with normal 20mm effects.

The JTAC passes new coordinate almost immediately. This one was in 10 digit MGRS. The JTAC never does tell [redacted] how he was deriving coordinates.

There was a radio swap on the auxiliary radio. Given what is audible without being enhanced, it appears that earlier [redacted] was being conducted on [redacted] up until this point.

There is some intra-flight comm while they are trying to re-join to a formation that supports buddy lasing tactics. [redacted] walks [redacted] through setting up his cockpit very specifically in preparation for the drop while also talking [redacted] eyes onto him for the rendezvous.

First pass at the target flight is joined 11nm from target. [redacted] has the lead. [redacted] never actually gives a "cleared hot" for this pass. He does tell [redacted] to "target that position" almost 3 minutes prior. [redacted] does ask for a "release call" about 1 minute prior to intended release. [redacted] gives the "30 seconds" to release call which is standard procedure. During this time the [redacted] is still recording and you can see the pilot looking from [redacted] FLIR to HUD, back and forth on the inbound run. There is no comm from [redacted] to have [redacted] initiate release and he indicates he couldn't get good target acquisition on his [redacted] FLIR. Noted that [redacted] didn't look outside at the target as he was passing over top.

The flight goes around and sets up for another attempt. [redacted] actually asks "Confirm we are cleared hot on a 090 run in heading". It is standard procedure for reserving the words "cleared" and "hot" for the JTAC's use only. [redacted] does respond with a "cleared hot" about 20 secs prior to release. [redacted] does make the call to [redacted] "one away" to indicate a bomb had been dropped before [redacted] tells him that nothing came off his jet.

As they go around to set backup for another run, [redacted] spends significant radio time talking his wingman through cockpit settings required to release a laser guided weapon when someone else is guiding it. [redacted] does his get the recorder back to the [redacted] FLIR during this time and acquires the correct target. [redacted] gives the "cleared hot" about 30 sec prior to release. [redacted] Good release, weapon guides to DMPI targeted on [redacted]

[redacted] FLIR. Within 8 seconds of impact [redacted] indicates he another target for [redacted] to prosecute

[redacted] tells [redacted] he will have to send [redacted] to the tanker to top off. He then asks for [redacted] fuel state and finds that he has more gas than he does. [redacted] then

directs [redacted] to strafe the tree line 50m south of the target he just hit. After the talk-on by [redacted] positively moves the target designation on the FLIR over the target described by [redacted].

At this point the aural "bingo, bingo" warning goes off indicating the aircraft fuel state has dropped below a setting selected by the pilot. This warning is mechanized to go off every 30 seconds until the pilot resets the bingo bug. It is community practice that when this warning goes off something needs to be done. Either change your flight profile as appropriate or reset the bug. Of note during this period, the warning goes off for 2 1/2 minutes before [redacted] resets the bug off target after the strafing run and the "check fire" call.

[redacted] directs his wingman to stay with him for this run and plan on executing a strafing run correcting off of his hits. [redacted] lays out the expected strafe pattern for his wingman: [redacted] This would appear to be a mix of both MSL and AGL altitudes.

As [redacted] continues to set up for his run he maintains the proper target designation. When the FLIR again un.masks the correct target is under the designation.

[redacted] is a continuous descending turn prior to "rolling in." He begins to aggressively maneuver the aircraft to ward final attack parameters from [redacted] his was 1.6nm outside the planned roll in point. During the roll-in the target designator diamond is visible in the HUD as on the correct target. The JTAC gives a "cleared hot" call with the aircraft in a 73 deg angle of bank and still turning. Prior to rolling out, the pilot undesignated the target and loses the diamond in the HUD. He then rolls out with the pipper on the friendly position and commences his firing run at [redacted].

The same technique of positively moving the pipper during firing to ensure target area coverage is employed. Post firing run the recorder is switched to capture the video, which shows clearly the friendly position as the pilot dips a wing to visually acquire any hits. Through the HUD video [redacted] there was no apparent smoke obscuring the friendly position. No effects of actual rounds impacting the friendly position were visible on the video.

Post firing run [redacted] indicates he didn't see any hits and asks [redacted] if he shot. [redacted] replies that he did, [redacted] calls "check fire, check fire." After a limited amount of time in the target area, the flight exits the AO to refuel.

[redacted] conducted the analysis of the video tapes and companion transcript. [redacted] is currently serving as the I [redacted]. Pertinent Qualifications: F/A-18C pilot, F-14 pilot, strike fighter and tactics instructor (SFTI), and Forward Air Controller (Airborne) (FAC(A)).