**Flight Test  
Brevity**

A Communications Guide  
  
04 Aug 2016

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Purpose:

Accelerate the communications training of flight testers. Desired end state is a flight test team who can safely, securely, effectively, and efficiently communicate with each other, whether over the radio or face-to-face.

Method:

Introduce **brevity codes** in their proper context, AFTTP(I) 3-2.5 (Feb 2002), to reduce the confusion of misused brevity and to leverage rated aircrews’ operational training. The AFTTP(I) 3-2.5 brevity codes most applicable to flight test are shown in Appendix A, with the definition and the flight test context included. Codes most often misused are indicated with an asterisk (\*) and an explanation of how to avoid misuse.

Develop a general approach to **Flight Test Brevity** to enhance test conduct quality and inform test teams’ communication plans. Appendix B contains Flight Test Brevity terms. Each entry states the term, and its definition. Typical errors associated with each term are also shown, as well as the effects of the error and a “plain English antidote” to be used if brevity breaks down.

Introduction:

**“Brevity codes”** are short, standard phrases used in operational radio communications to maximize information content while minimizing time spent transmitting (keying the microphone) and receiving (wondering what they guy just said).

For the United States armed forces, brevity codes are defined in the document “BREVITY – Multiservice Brevity Codes”[[1]](#footnote-1) with the Air Force document designation of AFTTP(I) 3-2.5. The February 2002 version is unclassified and publicly releasable.

**“Flight Test Brevity”** is a more general approach to test team communications (comm) that uses the principles of brevity codes, does not misuse official brevity codes, and defines specific words to be used in a communications plan for a particular test mission.

Properly used, brevity can assist flight test conduct because there is direct correlation between proper communications and test conduct quality, as shown in Table 1.

Table 1. Correlation Between Test Conduct Quality and Proper Communications

|  |  |
| --- | --- |
| Test Conduct Quality | Proper Communication |
| Safe | Correct |
| Secure | Concise |
| Effective | Complete |
| Efficient | Clear |

The Principles of Brevity:

AFTTP(I) 3-2.5 does not contain all of the words required for test conduct, but it is an important document for establishing the principles of brevity and for avoiding misuse of official terms.

**Principle 1 - Contracts**

One of the strengths of brevity is the coupling of a code with pre-arranged roles and responsibilities, or “contracts.” A given code, when broadcast, is always associated with a particular role, reducing the amount of time required for identifying the transmitter and intended receiver. A given code also updates or confirms the responsibilities of the transmitter and the receiver.

BREVITY EXAMPLE: TACO 02: “TACO 02 is IN RIGHT”  
 TACO 01: “PRESS”

PLAIN ENGLISH EXAMPLE: TACO 02: “TACO 01, TACO 02, I’m going to engage with the target that I had been previously assigned by making a sharp turn to the right, therefore I’ll no longer be able to stay visual with you, so you need to make sure you don’t run into me and keep scanning for other threats.”

TACO 01: “TACO 02, TACO 01, as Flight Lead, I’m directing you to continue your attack as stated in your transmission. I will continue to scan for other threats, while preventing your target from obtaining the advantage over you. I will also not run into you.”

In the above example, notice that the wingman, “Taco 02,” and flight lead, “Taco 01,” did not have to identify himself, could use single-syllable words, “IN” and “PRESS,” to communicate current and future actions, as well as changes to responsibilities for separation and support.

**Principle 2 - Only Three Types of Brevity Code**

Brevity codes can be sorted by their intent, as shown in Table 2. This sorting is important, because it shows the three types of brevity code: directive, informative, and requesting.

Table 2. The Three Brevity Code Types

|  |  |  |
| --- | --- | --- |
| Type | Intent | Examples |
| Directive | I am telling you to do something | “HOOK LEFT” |
| Informative | I am describing something to you | “WINCHESTER” |
| Requesting | I am requesting information AND you are expected to reply | “PICTURE” |

The bottom line is this: if you aren’t directing, informing or requesting, then you’re not using brevity, you’re having a discussion.

**Principle 3 - Standard Word Count**

Some brevity codes are standalone and some are always accompanied by other words, as shown in Table 3. This distinction is important, because it sets the expectation of how many words should constitute a radio call. If the number of words doesn’t match expectations, confusion may ensue.

Table 3. Word Count in Brevity Codes

|  |  |
| --- | --- |
| Word Count | Examples |
| Standalone | “MADDOG” “LINE ABREAST” |
| Standard Additional Words | “CHECK (number, left/right)” “(system) BENT” |

Brevity…A Small Part of the Comm Plan:

Part of the test engineer’s responsibility is to establish and use a communications plan during test conduct.

The primary purpose of the comm plan is to create a “cadence” to the test flow, allowing the test team to anticipate the next step, then execute that step at the right time and right place with the right actions. If the comm plan is poorly briefed and/or understood, the execution of the test will suffer because of the difficulty of establishing an understanding of what is to be done, by whom, when and where.

Brevity can assist the comm plan by reducing the “chatter” on the radio, allowing the test team to focus on action, rather than communication.

Brevity is NOT the most important part of a comm plan, however! Referring back to Table 1, you can see there is a priority order. Always remember that plain English (AKA “Trucker Comm”) is sometimes necessary to safely execute, but you should NEVER “talk around” classified over the radio.

Creating a Comm Plan:

**Defining your terms** is the foundation of a good comm plan. Test team members come from varied backgrounds. The mission materials and the pre-flight brief are the last opportunity to get everyone on the same page. A non-exhaustive listing of definition priorities is shown in Table 4.

Table 4. Priority of Term Definitions

|  |  |  |
| --- | --- | --- |
| Terms | Examples | Priority |
| Emergency/Anomalies | Knock-It-Off  Abort  Terminate | Highest |
| Switch Actuations | “Designate” v “TMS FWD” | High |
| Maneuvers | Success Criteria |
| Chase/Target Responsibilities | Safety v Photo v Area |
| Callsigns | “Test” v “Taco 01” | Medium |
| Plain English “Happy-to-Glad” | “Fly a normal pattern” v “Establish a normal pattern” | Low |

**Identifying the types of test points** provides the structure of a good comm plan. Some test missions consist of a single type of test point, necessitating a single, repeated comm plan. Other test missions have many types of test points, necessitating a carefully laid out comm plan, which clarifies which test point type is being flown for each test point.

**Scripting the plan** is essential to ensure the test team has an objective reference for planning and briefing purposes. Include pacing when appropriate, for example during weapons deliveries pauses might be inserted into the countdown to allow for team members to call for aborts. Also consider the role of hot mic, which tends to reduce brevity on the part of the aircrew while the ground controllers are still constrained by radio communications, as well as reduced/partial comm situations, where portions of the test team cannot participate in the comm as briefed.

Keeping brevity in mind is the finishing touch of a good comm plan. Brevity takes a comm plan to the next level, but the foundation and structure are more important! So, when you get to the point of scripting your plan, only after defining your terms and identifying test point types, apply the three principles of brevity:

1. **Contracts** - At each step of the comm plan, know who is responsible for speaking next.
2. **Three Types** - Ensure your words accurately reflect whether the responsible party is:
   1. Directing – “Cleared to…” “Check…”
   2. Informing – “Next point is…” “Point complete…”

or

* 1. Requesting – “Ops check…” “Confirm…”

1. **Standard Word Count** - Use words in accordance with the brief and the mission materials

Using the Comm Plan:

The key to establishing a cadence during test execution is consistency. Say the same thing at the same time to build test team confidence and to help reinforce the impression that the test mission is proceeding under control.

When inconsistencies creep in, they are a sign that something has changed. It may be as simple as fatigue, or it may be a serious system problem. Bring the test team back to the comm plan, if there are no safety-of-flight or test concerns. If there are problems to be resolved, be explicit about the plan of action and the exit criteria from the troubleshooting.

Example: “We are reviewing the data. If we can’t find the cause in the next 5 minutes, we’ll stop testing and return to base.”

Remember, you’re either using the comm plan, or you’re having a discussion. Make sure the entire test team is clear on where you are in your communications.

Table A1. Attention-Getting Brevity Codes

| Attention-Getting Brevity Code | Definition | Flight Test Context |
| --- | --- | --- |
| ABORT | Directive call to cease action/attack/event/mission. | Per the comm plan, but typically used when test limits or boundaries have been or will be exceeded. Usually implies a briefed recovery procedure. |
| (system) BENT/SICK | System indicated is inoperative/degraded | Describing system difficulties |
| BINGO | Fuel state needed for recovery. | Briefed fuel state that triggers an automatic decision to terminate testing and RTB. |
| BLIND | No visual contact with friendly aircraft/ground position. Opposite of VISUAL. | Could be a test or a safety consideration. |
| BOGEY | A radar or visual air contact whose identity is unknown. | An indication of “stranger traffic” that could interfere with test execution. |
| DIVERT | Proceed to alternate mission/base. | Directing to alternate landing site for WX/MX/other |
| JOKER\* | Fuel state above BINGO at which separation/bugout/event termination should begin. | Briefed fuel state that indicates a decision point in the test flow. \*Can have multiple jokers for various reasons (tanker, altitude block change, etc.) as determined by test team. |
| KNOCK IT OFF | In training, a directive call to cease all air combat maneuvers/attacks/ activities/exercises. | In test, typically used to indicate a safety of flight concern, directing termination of testing and resumption of “normal” flight. Followed by discussion of cause and next action to be taken. |
| NO FACTOR | Not a threat. | Declaring that an identified aircraft will not interfere with safety of flight or test. |
| NO JOY\* | Aircrew does not have visual contact with the target/bandit/landmark. Opposite of TALLY. | Similar to BLIND, but BLIND is for friendlies; NO JOY is for everyone else. |
| PADLOCKED | Informative call indicating aircrew cannot take eyes off an aircraft, ground target, or surface position without risk of losing TALLY/VISUAL. | Indicates aircrew is task saturated and channelized. |
| SOUR (mode) | Invalid/no response to an administrative IFF/SIF check. Opposite of SWEET. | Systems testing. |
| STRANGER | Unidentified traffic that is not a participant with the action in progress. | Traffic that could conflict with test execution or flight safety. |
| TALLY | Sighting of a target, non-friendly aircraft, or enemy position. Opposite of NO JOY. | Should cause a sigh of relief. |
| TERMINATE\* | 1. Stop laser illumination of a target.  2. In training, cease local engagement without affecting the overall exercise. | Often used to cease test point execution. In test, this means whatever the test team briefed it to mean, but the meaning is typically different from standard brevity code.  BE CAREFUL TO CLEARLY DEFINE USE WHEN FLIGHT TERMINATION SYSTEMS ARE EMPLOYED!!! |
| TUMBLEWEED | Indicates limited SA, NO JOY, BLIND and is a request for information. | HELP!! |
| VISUAL | Sighting of a friendly aircraft or ground position. Opposite of BLIND. | Could change required separations per the safety considerations. |

Table A2. Informative Geometry Brevity Codes

| Informative Geometry Brevity Code | Definition |
| --- | --- |
| ANCHOR(ED) (location) | 1. Directive call to orbit about a specific point. 2. Informative call to indicate a turning engagement at a specific location. 3. Refueling track flown by tanker. |
| FEET WET/DRY | Flying over water/land. |
| IN (Direction) | 1. Informative call indicating a turn toward a known threat. 2. Entering terminal phase of an air-to-ground attack. Opposite of OFF. |
| MARSHAL(ING) | Establish(ed) at a specific point. |
| OFF (direction) | Informative call indicating attack is terminated and maneuvering to the indicated direction. |
| ON STATION | Informative call that unit/aircraft has reached assigned station. |
| OUT (direction) | Informative call indicating a turn to a cold aspect relative to a known threat. |
| PUSHING | Departing designated point. |
| SADDLED | Informative call from wingman or element indicating the return to briefed formation position. |
| STRIPPED | Informative call that aircraft is out of prebriefed formation. Opposite of SADDLED. |
| WINGS LEVEL | Informative call from aircraft to FAC reporting rolled-out on final attack heading. |

Table A3. Relative Geometry Brevity Codes

| Relative Geometry Brevity Code | Definition |
| --- | --- |
| BEAM (cardinal direction) | Contact stabilized within 70 to 110 degrees of aspect. |
| BRAA | 1. Following information is in a tactical control format providing target bearing, range, altitude, and aspect, relative to the specified friendly aircraft. 2. Request/directive call to switch to tactical BRAA control format. |
| BULLSEYE | An established reference point from which the position of an object can be referenced.  Extremely important! Ensure that the BULLSEYE is briefed. Typically paired with a bearing and range. “Bullseye 050 at 50 miles.” Think polar coordinates with a briefed origin, instead of the Cartesian lat/long coordinates. |
| CLOSING | Decreasing in separation. |
| COLD | 1. A descriptive/directive call to initiate a turn away from anticipated threats. 2. Defined area is not expected to receive fire (enemy or friendly). 3. Intercept geometry will result in a pass or roll out behind the target. |
| DRAG (Cardinal Direction) | Contact aspect stabilized at 0-60 degrees angle from tail or 120-180 degrees angle from nose. |
| FLANK (Cardinal direction) | Contact aspect stabilized at 120 to 150 degrees angle from tail or 30 to 60 degrees angle from nose of aspect. |
| HOT | 1. A descriptive/directive call to initiate a turn toward anticipated threats. 2. Defined area is expected to receive fire (enemy or friendly). 3. Ordnance employment intended or completed. 4. Contact aspect stabilized at 160-180 degrees angle from tail or 0 – 20 degrees angle from nose. |
| OPENING | Increasing in separation. |
| STACK | Two or more contacts or formations with an altitude separation in relation to each other. |

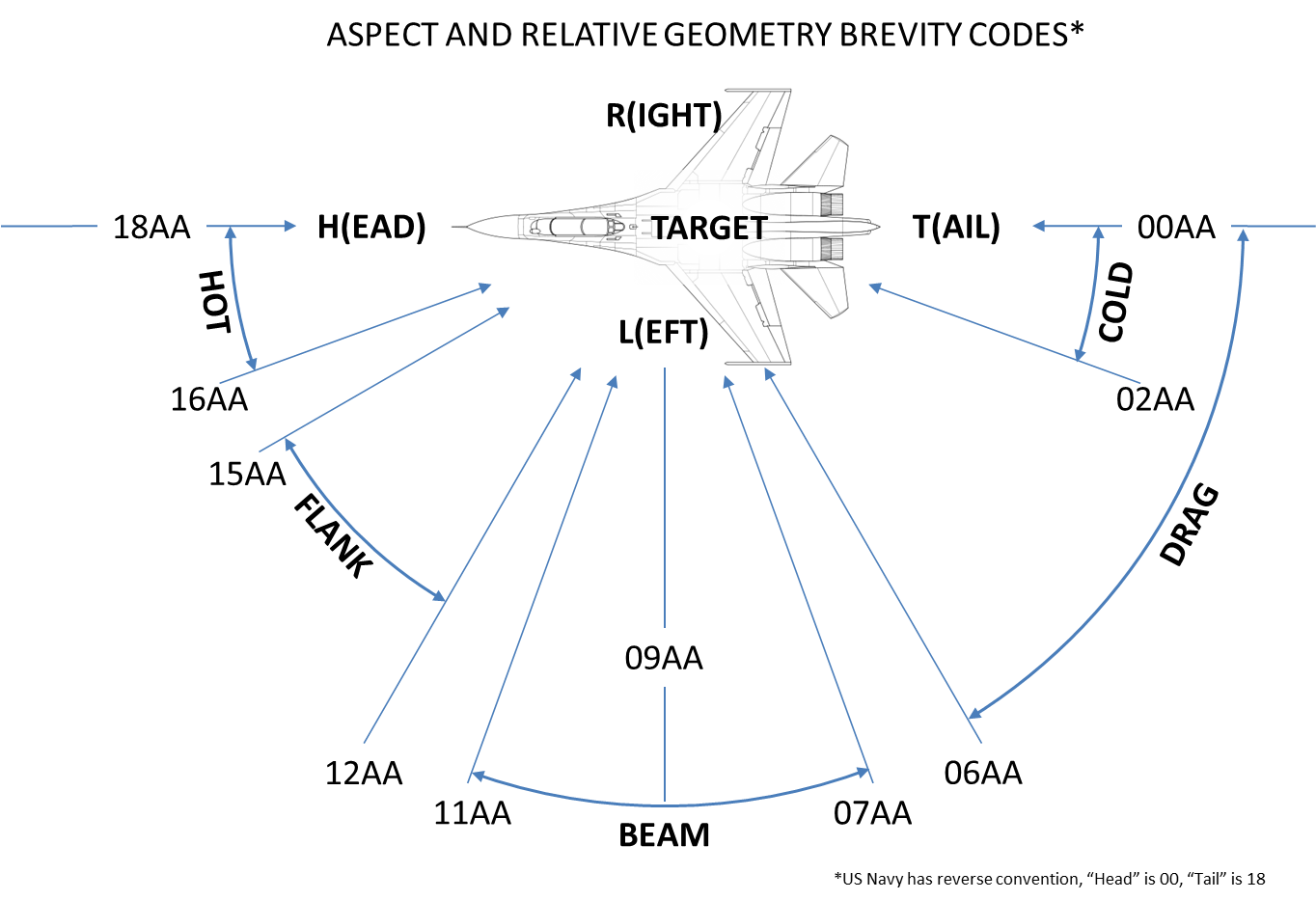


Figure A1. The Relation Between Aspect Angles and Relative Geometry Brevity Codes

Table A4. "Picture" Geometry Brevity Codes

| “Picture” Geometry Brevity Code | Definition | |
| --- | --- | --- |
| PICTURE | A request to provide air information pertinent to the mission in a digital bullseye format. | |
| NEW PICTURE | Used by controller or aircrew when tactical picture has changed. Supersedes all previous calls and re-establishes picture for all players. | |
| CONTACT | | 1. Sensor contact at the stated position. Think “VISUAL” for points on the ground. 2. Acknowledges sighting of a specified reference point. 3. Individual radar return within a GROUP or ARM. |
| GROUP | Any number of air contacts within 3 NM in azimuth or range of each other. | |
| PACKAGE | Geographically isolated collection of GROUPs. | |
| ARM | Element resulting from target maneuvers exceeding GROUP criteria. | |
|  |  | |
| AZIMUTH | A picture label describing two GROUPs separated laterally. | |
| ECHELON (Direction) | Picture label/fill-in describing two GROUPs with one group displaced behind and to the side of the other group. | |
| RANGE | A picture label describing two GROUPs separated in distance along the same line of bearing. | |
|  |  | |
| BOX | A picture label describing four distinct GROUPs with two in front and two behind in a square or offset square orientation. | |
| CHAMPAGNE | A picture label describing three distinct GROUPs with two in front and one behind. | |
| LADDER | A picture label describing three or more GROUPs separated in range. | |
| VIC | A picture label describing three GROUPs with a single group closest in range and two trail groups separated in azimuth. | |
| WALL | A picture label describing three or more GROUPs separated primarily in azimuth. | |
|  |  | |
| DEEP | Descriptive term used to indicate separation between the nearest and farthest GROUPs in range in a relative formation, used to describe a LADDER, VIC, CHAMPAGNE, BOX. | |
| STACK | Two or more contacts or formations with an altitude separation in relation to each other. | |
| WEIGHTED (Cardinal Direction) | (USN/USMC) Descriptive term used for a multiple GROUP formation (WALL, LADDER, VIC, CHAMPAGNE) that is offset in one direction. | |
| WIDE | Descriptive term used to indicate the separation between the farthest GROUPs in azimuth in a relative formation, use to describe a WALL, VIC, CHAMPAGNE, or BOX. | |
|  |  | |
| CONTAINER | Inner GROUP formation with four contacts oriented in a square or offset square. | |
| LEAD-TRAIL | Inner GROUP formation of two contacts separated in range. | |
| LINE ABREAST | Inner GROUP formation of two or more contacts separated in azimuth. | |
| NEAR-FAR | (USAF) Fighter term depicting a radar-apparent description of two or more contacts within a GROUP separated in range. | |
| SIDE-SIDE | (USAF) Fighter term depicting a radar-apparent description of two or more contacts within a group separated in azimuth. | |
| STINGER | Three-ship inner group formation with two lead contacts line abreast and the single in trail. | |
| WEDGE | Three-ship inner group formation with a single contact closest in range and two trail contacts line abreast. | |
|  |  | |
| CROSSING | Descriptive term for when two GROUPs initially separated in azimuth decrease azimuth separation to pass each other. | |
| MANEUVER (AZIMUTH /RANGE/  ALTITUDE) | Informative call that specified GROUP is maneuvering in azimuth, range, and/or altitude. | |
| MARSHAL(ING) | Establish(ed) at a specific point. | |
| MERGE(D) | 1. Information that friendlies and targets have arrived in the same visual arena.  2. Informative call indicating radar returns have come together. | |
| PASSING | Descriptive term for when two GROUPs initially separated in range, decrease range separation and pass each other. | |
| SWITCHED | Indicates an attacker is changing from one aircraft to another. | |
| TRACK (cardinal direction) | Group/contact’s direction of flight. | |

Table A5. Maneuver Brevity Codes

| Maneuver Brevity Code | Definition | |
| --- | --- | --- |
| BANZAI | Informative/directive call to execute launch and decide tactics.  Launch your missiles, then continue to the target. May end up as a merge.  Not common in DT, but significant for OT tactics. Also, fun to say, with aerial combat overtones. | |
| BRACKET (direction) | Directive call to maneuver to a position on opposing sides, either laterally or vertically from the target. | |
| BUSTER | Directive call to fly at maximum continuous speed (military power). | |
| CRANK (Direction) | F-Pole maneuver in the direction indicated; implies illuminating target at radar GIMBAL limits. | |
| EXTEND (ING) (Direction) | Short-term maneuver to gain energy, distance, or separation, normally with the intent of reengaging. | |
| GATE | Directive/informative call to fly as quickly as possible, using after-burner/max power. | |
| HOT | 1. A descriptive/directive call to initiate a turn toward anticipated threats. 2. Defined area is expected to receive fire (enemy or friendly). 3. Ordnance employment intended or completed. 4. Contact aspect stabilized at 160-180 degrees angle from tail or 0 – 20 degrees angle from nose. | |
| JINK | Directive call to perform an unpredictable maneuver to negate a tracking solution. | |
| LEAN (direction) | Directive/informative call to maneuver in a direction to avoid the threat. | |
| NOTCH(ING)  (direction) | Directive/informative call that an aircraft is in a defensive position and maneuvering with reference to an air-to-air threat. | |
| OFFSET (direction) | Directive/informative call indicating maneuver in a specified direction with reference to the target. | |
| PUMP | A briefed maneuver to minimize closure on the threat or geographical boundary with the intent to re-engage. | |
| SHORT SKATE | (USAF) Informative or directive call to execute launch-and-leave tactics and be out no later than MAR/DR.  Launch your missiles, then turn away to fight another day prior to a briefed distance from the target. | |
| SKATE | Informative or directive call to execute launch-and-leave tactics.  Launch your missiles, then turn away to fight another day. Turning at a distance closer than short skate to support your missile for longer. | |
| STERN | Request for, or directive to, intercept using STERN geometry. | |
|  |  | |
| CHECK (number, left/right) | Turn (number) degrees left or right and maintain new heading. | |
| COMEOFF (direction) | 1. Directive call to maneuver as indicated to either regain mutual support or to deconflict flight paths. Implies both VISUAL and TALLY. 2. Directive call to maneuver or execute a specific instruction (e.g., COMEOFF DRY). | |
| HARD (Direction) | High-G, energy sustaining 180 degree turn (or as directed) in the indicated direction. | |
| HOOK LEFT/RIGHT | Directive call to perform an in-place 180 degree turn. | |
| IN PLACE (direction) | Perform indicated maneuver simultaneously. | |
| PITCH/PITCHBACK LEFT/RIGHT | Directive call for fighter or flight to execute a nose-high heading reversal. | |
| SLICE/SLICEBACK (left/right) | Directive call to perform a high-G descending turn in the stated direction, usually 180 degree turn. | |
|  |  | |
| FLOAT | Directive/informative call to expand the formation laterally within visual limits to maintain radar contact or prepare for a defensive response. | |
| FLOW (Direction) | Directive call to fly stated heading. | |
| MARSHAL(ING) | Establish(ed) at a specific point. | |
| POP | 1. Starting climb for A/S attack.  2. Max performance climb out of low-altitude structure. | |
| POST HOLE | Rapid descending spiral. | |
| SHACKLE | One weave, a single crossing of flight paths; maneuver to adjust or regain formation parameters. | |
| SPIN | Directive or informative call to execute a timing/spacing maneuver. | |
| SPLIT | | Informative/directive call that flight member is leaving formation to pursue a separate attack; VISUAL may not be maintained. |

Table A6. Request Brevity Codes

| Request Brevity Code | Definition |
| --- | --- |
| POSIT | Request for friendly position; response in terms of a geographic landmark or off a common reference point. |
| STATUS | 1. Request for an individual’s tactical situation.  2. (Group) Request for a full positional update in digital bullseye format on the specified group. |
| WHAT LUCK | Request for results of missions or tasks. |
| WORDS | Directive or interrogative call regarding further information or directives pertinent to the mission. |

Table A7. Weapon Test Brevity Codes

| Weapon Test Brevity Code | Definition |
| --- | --- |
| (weapon) AWAY | Release/launch of specified weapon. |
| FOX (Number) | Simulated/actual launch of air-to-air weapons. ONE - semiactive radar-guided missile. TWO - infrared-guided missile. THREE - active radar-guided missile.  <http://www.youtube.com/watch?v=qau8Wiv7Aas> |
| GUNS | Reference to gun engagement. |
| MILLER TIME | 1. (A-G) Informative call indicating completion of air-to-ground ordnance delivery. Generally used by the last striker in conjunction with a pre-coordinated egress plan.  2. (CSAR) Indicates survivor(s) are aboard recovery vehicle in Combat Search and Rescue. |
| PIG(S) | Friendly glide weapon (i.e., JSOW). |
| RIFLE | Friendly air-to-surface missile launch. |
| RIPPLE | Two or more munitions released or fired in close succession. |
| SHOOTER | Aircraft/unit designated to employ ordnance. |
| SHOTGUN | Briefed weapons state at which separation/bugout should begin. |
| SPLASH(ED) | 1. (A/A) Target destroyed.  2. (A/S) Weapons impact.  3. (S/S) Informative call to observer or spotter five seconds prior to estimated time of impact. |
| TARGET | 1. Directive call to assign group responsibility.  2. (w/TAD/TIDS, etc.) Inter-flight directive to target via information displayed on data link system. |
| TARGETED | Informative call that GROUP responsibility has been met. |
| THUNDER | Informative call one minute prior to A/S weapons impact. |
| WHAT STATE (Item) | Request for amount of fuel and missiles remaining. Ammunition and oxygen are reported only when specifically requested or critical.  (Active) = number of active radar missiles remaining.  (Radar) = number of semi-active radar missiles remaining.  (Heat) = number of IR missiles remaining.  (Fuel) = pounds of fuel or time remaining. |
| WINCHESTER | No ordnance remaining. |
|  |  |
| ARIZONA | No ARM ordnance remaining. |
| MAGNUM (system/location) | Launch of friendly antiradiation missile. |
| SLAPSHOT (type/bearing) | Directive call for an aircraft to immediately employ a best available HARM against a specified threat at the specified bearing. |
| SNIPER (type, location [range Bearing]) | Directive call for an aircraft to employ a range-known HARM against a specified threat at the specified location. |
| WORKING | 1. (system w/location) Platform gathering EOB on a designated emitter.  2. Platform executing EID on a specific aircraft/group to obtain identification necessary for BVR employment. |
|  |  |
| CHEAPSHOT | AIM-120 missile data link terminated between high and medium PRF active. |
| FOX 3 (X) SHIP (formative description) | (USAF) Valid missile shot against (x) separate targets (assumes 1 missile per target). |
| FOX THREE/ SECOND FOX 3 | (USAF) Simulated or actual launch of multiple active radar-guided missiles on the same target. |
| HUSKY | Informative call that the AIM-120 is at HPRF active range. |
| MADDOG | Visual AIM-120/AIM-54 launch. |
| PITBULL | 1. Informative call that the AIM-120 is at MPRF active range.  2. Informative call that the AIM-54 is at active range. |
| SKOSH | Aircraft is out of/or unable to employ active radar missiles. |

Table A8. Radar or Sensor Test Brevity Codes

| Radar/Sensor Test Brevity Code | | Definition |
| --- | --- | --- |
| BROKE LOCK | | Advisory call regarding loss of radar/IR lock-on. |
| BUDDY LOCK | | Locked to a known friendly aircraft. Normally a response to a “SPIKED” or “BUDDY SPIKE” call.  Usually for transit to/from range, but could be used during test. |
| BUDDY SPIKE (Posit/heading/alt) | | Friendly aircraft air-to-air indication on radar warning receiver (RWR).  Usually for transit to/from range, but could be used during test. |
| CAPTURED | | Aircrew has acquired and is able to track a specified air-to-ground (A/G) target with an on-board sensor. |
| CLEAN | | 1. No sensor information on non-friendly group of interest.  2. No visible battle damage. Battle Damage (BD) checks “Clean and Dry” means no damage and no leaking fluids.  3. Aircraft not carrying external stores. Aircraft configuration. Be careful and be specific. Better to state explicitly the required configuration than to just say “clean.” |
| DROP(PING) | | 1. Directive/informative call to stop monitoring a specified emitter/target and resume search responsibilities. 2. Informative call that fighter has discontinued tracking responsibility. 3. Remove the emitter/target from tactical picture/track stores. 4. Directive call to remove a specific system or EOB category from search responsibilities. |
| EMPTY | | No emitters of interest detected. |
| FADED | | Radar contact is (temporarily) lost on nonfriendly air/surface contact and any positional information given is estimated. |
| GADGET | | Radar or emitter equipment. |
| GIMBAL (w/Direction) | | Radar target is approaching azimuth or elevation limits. |
| HIT(S) | | 1. Momentary radar return(s). 2. (A/A) Indicates approximate target altitude (e.g., GROUP BULLSEYE 360/10, HITS 15 thousand). 3. (A/G) Weapons impact within lethal distance. |
| LASER ON | | Directive call to start laser designation. |
| LASING | | Informative call indicating that the speaker is firing the laser. |
| LOCKED | | 1. (w/Group Label) Radar lock-on; SORT is not assumed.  2. (w/Position) Radar lock-on; correct targeting is not assumed. |
| MAPPING | | Multifunction radar in an A/G mode. |
| MARK | | 1. Used when aircraft passes over pickup zone/landing zone (PZ/LZ) team.  2. Directive term to record the location of a ground point of interest. |
| MONITOR | Maintain radar awareness on specified group. | |
| MUD (type/direction) | | Informative call Indicating RWR ground threat displayed. |
| MUSIC | | Radar electronic deceptive jamming. |
| NAILS (direction) | | RWR indication of AI radar in search. |
| NAKED | | No RWR indications. |
| NEGATIVE CONTACT | | Sensor information on a friendly aircraft is lost. Termination of CONTACT, track plotting is not warranted. |
| RAYGUN (Position/Heading/ Altitude) | | Indicating a radar lock-on to unknown aircraft. A request for a “BUDDY SPIKE” reply from friendly aircraft meeting these parameters. |
| SHIFT (direction) | | Directive call to shift laser illumination. |
| SINGER (type/direction) | | Informative call of RWR indication of SAM launch. |
| SNAPLOCK (BRAA) | | Indicates fighter has obtained a radar contact inside briefed threat range with beam, flank, or hot/head aspect. |
| SNIFF (type) | | Passive sensor indication of a radar emitter. |
| SPARKLE | | 1. Target marking by IR pointer.  2. Target marking by gunship/ FAC-A using incendiary rounds. |
| SPIKE(D) (direction) | | RWR indication of an AI threat in track or launch. |
| SPOT | | Acquisition of laser designation. |
| STROBE(S) (bearing) | | Radar indication(s) of noise jamming. |
| TIED | | Positive radar contact with element or aircraft. |
| TOY | | HTS pods. |

Table A9. Avionics or Datalink Testing Brevity Codes

| Avionics/Datalink Test Brevity Code | Definition |
| --- | --- |
| (system) BENT | System indicated is inoperative. |
| (system) SICK | System indicated is degraded/partially operative. |
| (system) SILENT (time) | System will be unavailable for time indicated. |
| (system) WELL | System indicated is fully operative. |
| SOUR (mode) | Invalid/no response to an administrative IFF/SIF check. Opposite of SWEET. |
| SWEET | Valid response to an administrative IFF/SIF check request. Opposite of SOUR. |
|  |  |
| FLASH (system) | Temporarily activate specified system for identification purposes (IFF/afterburner/flare/chaff/etc.). |
| STRANGLE (system) | Turn off equipment indicated.  Example: “STRANGLE PARROT” |
| TOGGLE | Execute a briefed change of an avionics setting. |
|  |  |
| GADGET | Radar or emitter equipment. |
| PARROT | IFF/SIF transponder. |
| TIMBER | Air control NPG of Link 16/TADIL J.  Datalink testing, especially “TIMBER SWEET” or “TIMBER SOUR” |
| TOY | HTS pods. |
| UNIFORM | UHF radio. |
| VICTOR | VHF radio. |
| PRIME | Primary radio frequency. UHF if UHF/VHF. UHF1 if UHF1/UHF2. |
| AUX | Auxiliary radio frequency. VHF if UHF/VHF. UHF2 if UHF1/UHF2 |
|  |  |
| FENCE (IN/OUT) | Set cockpit switches as appropriate before entering/exiting the combat area. |
| INTERROGATE | Interrogate the designated contact of the IFF mode indicated. |
| SQUAWK (mode/Code) | Operate IFF/SIF as indicated or IFF/SIF is operating as indicated. |
| SQUAWKING (Mode #) | An informative/descriptive call denoting a BOGEY is responding with an IFF/SIF mode or code other than that prescribed by the ATO/identification criteria. |
| ZAP | Request for data link information. |

Table A10. Clearance Brevity Codes

| Clearance Brevity Code | Definition | Flight Test Context |
| --- | --- | --- |
| CLEAR(ED)\* | Response to requested action is authorized. No engaged/support roles are assumed. | **Test point** pacing ONLY.   DO NOT SAY CLEARED WHEN A/C IS ABOUT TO TAXI, TAKE THE RUNWAY, OR LAND.   The “cleared” word is reserved in those situations for the controlling agency (ground, tower, etc.). Don’t get your aircrew violated because they acted without clearance from the controlling agency! |
| CLEARED HOT\* | Ordnance release is authorized. | NOT FOR YOU TO SAY! Range control has the hammer. |
| CONTINUE | Continue present maneuver, does not imply a change in clearance to engage or expend ordnance. | VERY USEFUL. By replying to an aircrew query with “CONTINUE”, you are indicating that you are aware of the situation, you’ve taken it into consideration, and they can safely, securely, effectively, and efficiently proceed with the current course of action. |
| CONTINUE DRY | Ordnance release not authorized. | NOT FOR YOU TO SAY! |
| PRESS\* | Directive call to continue the attack; mutual support will be maintained. Supportive role will be assumed by the speaker. | Not typically used in flight test conduct, but a very common term in informal settings. |
| PUSH (Channel) | Go to designated frequency; no acknowledgment required. | Not for you to say, but the flight lead is directing the flight to change frequencies, so follow along. |
| RESET | Proceed to a pre-briefed position or AO. | Start over, per the brief. |
| RESUME | Resume last formation/route/mission ordered. | If test point was paused, resume at last step. |
| ROGER\*\*\* | Indicates the receipt of radio transmission; does not indicate compliance or reaction. | One of the more abused brevity codes. Only indicates that you heard, nothing more. “ROGER, COPY” is redundant, as is “ROGER, WILCO.” |
| ROLEX (+/- Time) | Time line adjustment in minutes always referenced from original preplanned mission execution time. Plus means later; minus means earlier. | Often used when delays have offset brief mission times. |
| SAUNTER | Fly at best endurance. | Used when test is on hold. |
| SKIP IT | Veto of fighter COMMIT, usually followed with further directions. | Used to veto aircrew suggestion or to tell aircrew NOT TO PICKLE. |
| UNABLE | Cannot comply as requested or directed. | Used to indicate inability to comply. |
| WEAPONS ( )  FREE  TIGHT  HOLD\* (USAF, USA,USMC)/ SAFE\* (USN) | Fire only:  At targets not identified as friendly IAW current ROE.  At targets positively identified as hostile IAW current ROE.  In self-defense or in response to a formal order. | Weapons testing. |

Table A11. Flight Condition Brevity Codes

|  |  |
| --- | --- |
| Flight Condition Brevity Code | Definition |
| VERY FAST | Target speed greater than 900 knots/ 1.5 Mach ground speed. |
| FAST | Target speed is estimated to be 600 – 900 knots /Mach 1 – 1.5 ground speed. |
| SLOW | Contact with ground speed of less than 300 knots. |
|  |  |
| VERY HIGH | Target above 40,000 ft MSL. |
| HIGH | Contact is between 25,000 and 40,000 ft MSL. |
| MEDIUM | Contact altitude between 10,000 ft MSL and 25,000 ft MSL. |
| LOW | Contact altitude below 10,000 ft MSL. |
| WEEDS | Indicates that aircraft are operating close to the surface. |

Table A12. Rules of Engagement & ID Brevity Codes

|  |  |
| --- | --- |
| ROE & ID Brevity Code | Definition |
| BANDIT | An aircraft identified as an enemy in accordance with (IAW) theater ID criteria. The term does not necessarily imply direction or authority to engage. |
| BOGEY | A radar or visual air contact whose identity is unknown. |
| CHICKS | Friendly aircraft, typically used for aircraft on the tanker. |
| FRIENDLY | A positively identified friendly aircraft, ship, or ground position. |
| HOSTILE | A contact identified as enemy upon which clearance to fire is authorized in accordance with theater rules of engagement. |
| OUTLAW | Informative call that a BOGEY has met point of origin criteria for ROE.  Point of Origin means that the contact came from a geographic location identified as hostile. |
| SPADES | An interrogated group/radar contact which lacks all of the ATO (or equivalent) IFF/SIF modes and codes required for the ID criteria. |
|  |  |
| DECLARE | Inquiry as to the identification of a specified track(s), target(s), or correlated GROUP. |
| ID | 1. Directive call to identify the target.  2. Informative call that identification is accomplished, followed by type. |
| PAINT(S) | An interrogated group/radar contact that is responding with any of the specified IFF/SIF modes and correct codes established for the ID criteria. |
| PRINT (Type) | Active NCTR reply. |

Table B1. Flight Test Brevity Terms

| Correct Term | Meaning | Typical Error | Effect of Error | Plain English Antidote |
| --- | --- | --- | --- | --- |
| “RADIO CHECK” | I’m requesting that you tell me how well you can hear my transmission on UHF PRIME. | Calling from AUX or VHF | Aircrew think you’re calling on UHF PRIME but you’re actually on VHF or UHF AUX | * “How do you hear me on UHF PRIME? |
| “RADIO CHECK ON AUX” | I’m requesting that you tell me how well you can hear my transmission on the auxiliary (either UHF2 or VHF). | * “RADIO CHECK” * Accidentally calling from UHF PRIME | * Aircrew think you’re calling on UHF PRIME * Aircrew think you’re calling on VHF or UHF AUX but you’re actually on UHF PRIME | * “How do you hear me on [UHF AUX or VHF]? |
| “RADIO CHECK ON VICTOR” | I’m requesting that you tell me how well you can hear my transmission on VHF. | * “RADIO CHECK” * Accidentally calling from UHF PRIME | * Aircrew think you’re calling on UHF PRIME * Aircrew think you’re calling on VHF or UHF AUX but you’re actually on UHF PRIME | * “How do you hear me on VHF? |
| “[Control Room Callsign]  IS READY  [for taxi/takeoff/point X/etc.]” | The control room is ready to support test as soon as you get clearance for the next administrative step (taxi, takeoff, etc.), or as soon as you call back with “TEST IS READY” | * “CLEARED TO TAXI” * “CLEARED TO TAKEOFF” * “…” (crickets) | * Aircrew begin taxi without proper coordination. * Aircrew take the runway without proper coordination. * Aircrew are wondering what’s going on. | * “The control room has seen everything necessary before you leave the parking area.” * “The control room has seen everything necessary before you leave EOR.” * Say something/anything. |
| “CLEARED TO MANEUVER” | Initiate action per the brief for this test point | * Saying “CLEARED TO MANEUVER” way too early, i.e. prior to setup, instead of clearing the aircrew to a setup flight condition to prepare for the actual maneuver. * Saying “CLEARED TO MANEUVER” way too late, i.e. the aircrew are waiting and burning gas, or they’ve already begun the maneuver without your clearance. | * Confusion ensues about if the test point has actually begun, if aircrew are on parameters, or if clearance has already been issued, requiring a conversation. * TC loses control of the mission and the trust/confidence of the aircrew because aircrew have gone rogue, not wanting to burn gas and time waiting for your clearance. | “We are on test point XX. We show good setup. The control room is ready. You are cleared to maneuver.” |
| “CONCUR” | I have heard your proposed course of action and I agree with it | * “…” (crickets) * ”CONFIRM” * “AFFIRMATIVE” * “COPY” | * Aircrew have no idea why they are waiting, if the radios are broken, and generally if you are still alive and breathing * Answering a proposal with a request. * Answering a complicated proposal with a simple “yes” * Aircrew are left wondering you have any opinion. | “I agree” |
| “CONFIRM [declarative statement]” | I am requesting that you reply with your understanding of something or with the current status of something. | Convoluted verbiage | Confusion | “Is the [THING] in [STATE]?” |
| “CONTINUE” | I have heard you, but your concern can be addressed later. Keep going. | * “…” (crickets) * “HOLD” | * Aircrew have no idea why they are waiting, if the radios are broken, and generally if you are still alive and breathing * Aircrew confusion, since they may not be expecting to hold their current flight condition, since they brought up a concern. | * Say something/anything. * “Keep doing what you’re doing.” |
| “AFFIRM” | Yes | “ROGER” | Answering a question with “I heard you” brings things to a halt | “Yes” |
| “NEGATIVE” | No | See “AFFIRM” | See “AFFIRM” | “No” |
| “ROGER” | I have heard you | * “ROGER, COPY” * “ROGER, WILCO” | * I have heard you, and I have heard you and recorded what you said. * I have heard you, and I have heard you, and I will comply with your request (even though you probably didn’t request anything) | “I understand” |
| “COPY” | I have heard you and have recorded what you said | * See “ROGER” * Saying “COPY” but not actually remembering what was said | Important information/data gets lost because it wasn’t recorded. Or the speaker assumes too much retention on the part of the hearer. | Read back what you just heard |
| “WILCO” | I have heard you and will comply with your request | * See “ROGER” * Saying “WILCO” when you mean “AFFIRM” | Confusion about the status of the request/statement | “I will do [the thing you just requested]” |
| “ACKNOWLEDGE” | I have updated something and am requesting verbal acknowledgement from all players. | “…” (crickets) | * You don’t know that the test team has heard the update * The test team doesn’t know you have heard the update. | * Repeat the transmission and request acknowledgement. * Repeat back the transmission verbatim: “The control room copies new floor 10K.” |
| “WHEN ABLE” | It sounds like you’re busy, but I’ve got something to discuss, so get back to me when you can talk | Talking over or into a busy pilot’s conversation/thought process | Increased frustration | “I’ve got a question/piece of information when you have a chance.” |
| “STANDBY” | I have heard you, but I’m unable to reply to your transmission in detail at this time. In a moment, I will say more. | * “…” (crickets) * “HOLD” | * Aircrew have no idea why they are waiting, if the radios are broken, and generally if you are still alive and breathing. Also waste of gas/resources as aircrew come off conditions. * Aircrew confusion, since they may not be expecting to hold their current flight condition | * Say something/anything. * “Wait a moment while we discuss.” |
| “HOLD” | Maintain current conditions until further notice. | * “…” (crickets) * “STANDBY” | * Aircrew have no idea why they are waiting, if the radios are broken, and generally if you are still alive and breathing * Aircrew confusion, since they may not be expecting to be told to wait for you to get back to them. | * Say something/anything. * “Keep doing what you’re doing.” |
| “…” | A pause between transmissions to allow the test team to interject. Often used in countdowns to irreversible events | * Holding the transmission key for the duration of the countdown * Too short of a pause | * The test team cannot interject to prevent mistaken triggering of the irreversible event * The aircrew don’t have time to listen for interjections | * “…”  (waiting long enough to listen for test team inputs) |
| “[INCREASE/DECREASE] [PARAMETER]” | Per the brief and the mission materials, the parameter is about to go out of tolerance/limits unless you comply with this advisory call. | * “CHECK/WATCH [PARAMETER]” * “…” (crickets) | * Aircrew doesn’t know what you want after they look at the parameter. The parameter probably dropped out of their scan, which necessitated the call in the first place, so they aren’t aware of the corrective action. * Test point needs to be repeated, test limits are exceeded, aircraft limits are exceeded. | * “Your [PARAMETER] is approaching [TOLERANCE/LIMIT].” * Say something/anything. |
| “TERMINATE”  “ABORT”  “KNOCK-IT-OFF”  Ex.  Project: "Quell Terminate"  Quell 1: "Quell 1 Terminate"  Quell 2: "Quell 2 Terminate"  Project: "Project Terminate, [REASON]"  Ex.  Test: "Terminate, Test Terminate"  Chase: "Chase Terminate"  Project: "Project Terminate"  Test: “[REASON]” | Per the brief and the mission materials, stop what you’re doing and take corrective action. | * Not reacting per the brief * The originator not saying the reason for the call. | Confusion | * Because of the urgent nature of these calls, it’s better to say the wrong thing than to say nothing. The best this is to practice the calls in the brief and over the radio prior to beginning test execution. * Say something/anything. |
| “POINT COMPLETE” | The test point was executed within the success criteria per the brief and mission materials | * Saying “POINT COMPLETE” before you know if it was executed successfully. * Saying “POINT COMPLETE” before the maneuver and/or recovery are finished. * Saying “POINT COMPLETE” when what you really mean is “TERMINATE.” * “…” (crickets) | * Either you’re lucky and the point was actually complete, or you have to eat your words and call for a repeat because the point was not, in fact, complete. * The aircrew cease test point execution prior to completion, negating the data and wasting millions of dollars of taxpayer money. * The aircrew aren’t aware that something is wrong and continue with the test, possibly repeating the mistake. * Bueller?... Bueller?... Bueller? | * “Standby while we look at the data.” * Say nothing until the test point is complete. * “Mach/airspeed/altitude out of parameters. We’ll need to repeat that point.” * ”The control room is satisfied with this test point.” |
| “NEXT [POINT/CARD/FLIGHT CONDITION]” | The next thing is… | “…” (crickets) | Two effects, depending on aircrew. Either the aircrew wait and wonder what’s next, or the aircrew declare what’s next and the control room loses control of the mission. | “Next point is X, at X feet and X Mach.” |
| “MISSION COMPLETE” | The data, fuel, aircraft, or formation requires that the test portion of the mission must conclude. | * “…” (crickets) or generally success-ambiguous comm * “CLEARED TO RTB” | * Aircrew ask questions, trying to determine if the mission is going to continue or not. * ATC hears “RTB” and begins coordination before the aircrew are ready. | * Say something/anything * “The control room shows there is no more testing to be accomplished.” |

1. <http://www.dtic.mil/cgi-bin/GetTRDoc?Location=U2&doc=GetTRDoc.pdf&AD=ADA404426> [↑](#footnote-ref-1)