

The Kinda Sorta Tactical Game

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Forward

The organizers of *The Kinda Sorta Tactical Game* wish to thank a variety of industry professionals, law enforcement experts, and military personnel for their advice and assistance in bringing KSTG into existence.

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Purpose

Kinda Sorta Tactical Game (KSTG) was created as an outlet for practical shooters to exercise defensive shooting skills and tactics in a competitive environment with minimal subjective judgments by officials.

The rules of KSTG evolved from other popular competitive shooting sports such as IPSC and IDPA. Many concepts, procedures, and naming conventions are borrowed from these sports for the sake of familiarity.

The rules are an attempt to balance objectivity, common tactical principles, and fun. KSTG is not intended to serve as formal training. It is a game. Have fun.

Safety

Above all, KSTG competition must always be conducted with safety as its first priority.

Basic firearms safety rules that must be adhered to at all times during KSTG competition:

1. All guns are always loaded. Even if they are not, treat them as if they are.
2. Never let the muzzle point at anything you are not willing to destroy.
3. Keep your finger off the trigger until your sights are on the target and you have made the decision to fire.
4. Identify your target and what is behind it. Never shoot at anything you have not positively identified.

I. Equipment

A. Semiautomatic Pistol Rules

To participate in KSTG competition, any semiautomatic pistol must meet all of these criteria:

1. **Allowable calibers:** 9x19mm, 357 SIG, .40 S&W, .45 ACP, .45 GAP, and 10mm *only*.
2. **Box:** Pistol (without magazine) must fit in a box that is 8¾ inches long and 6 inches tall. There is no width limit/requirement.
3. **Barrel:** 5 inches maximum, no porting or compensators allowed.
4. **Weight:** 41 ounces maximum, unloaded with empty magazine.
5. **Sights:** Any sights or sighting system that will fit on the pistol and fit in the box and do not explicitly violate any other KSTG rule are allowed.
6. **Magazine funnel:** The external dimensions of the magazine well can be no wider than the widest part of the pistol's gripping surface (or factory grips for that model if the pistol is using thinned grips).
7. **Safeties:** Competitor cannot remove or disable any integral safety mechanism (except magazine disconnect safeties). This includes grip safeties.
8. **Magazines:** Cannot be loaded with more than 10 rounds (plus one in the chamber); can be any length.
9. **Trigger pull:** First shot trigger pull must be no lighter than 4 pounds as measured by an NRA weight set.

B. Revolver Rules

To compete in KSTG events, any revolver must meet all of these criteria:

1. **Allowable calibers:** .38 Special, .357 Magnum, .44 Special, and .44 Magnum *only*. No moon clips are allowed.
2. **Box:** Revolver must fit in a box that is 8¾ inches long and 6 inches tall. There is no width limit/requirement.
3. **Barrel:** 4 inches maximum, no porting or compensators allowed.
4. **Weight:** 41 ounces maximum, unloaded.
5. **Sights:** Any sights or sighting system that will fit on the revolver and fit in the box and do not explicitly violate any other KSTG rule are allowed.
6. **Safeties:** Competitor cannot remove or disable any integral safety mechanism.
7. **Capacity:** Cannot be loaded with more than 6 rounds.

8. **Trigger pull:** Double action trigger pull must be no lighter than 4 pounds as measured by an NRA weight set.

C. Ammunition

1. **Ammunition types:** Incendiary, tracer, and metal-piercing ammunition is prohibited in all KSTG events.
2. **Muzzle Energy:** For KSTG, muzzle energy (ME) is calculated as follows:
$$ME = (\text{bullet weight} / 100) * (\text{velocity} / 100) * (\text{velocity} / 100) * 2.22$$
3. **Power Factor:** For KSTG, power factor (PF) is calculated as follows:
$$PF = (\text{bullet weight}) * (\text{velocity}) / 1,000$$
4. **Minimum power floor:** All ammunition used in KSTG matches must meet both of the following requirements:
 - a. *Minimum ME:* 300 ft-lbs
 - b. *Minimum PF:* 125
5. **Major power floor:** To create a level playing field and recognize that some ammunition generates greater recoil, ammunition which exceeds the minimum power floor by a substantial degree will be scored as *Major*. To score *Major*, ammunition must comply with the Minimum Power Floor (see rule I.D.4) and also meet at least one of the following:
 - a. *Minimum ME:* 450 ft-lbs
 - b. *Minimum PF:* 170
6. See *Appendix A* for a chart that identifies, by bullet weight, the minimum muzzle velocity to achieve Minor and Major power floors.
7. **Chronograph procedure**
 - a. To verify ammunition makes the *Minor* or *Major* power levels, four rounds of match ammunition will be fired through a chronograph using the competitor's pistol. Three out of the four rounds must be at or above the velocity listed in *Appendix A* to meet the power floor. *Note: this is not an average; three of the four rounds must be above the power floor.*
 - b. If a competitor's ammunition cannot make *Major* power factor, he will be scored shooting *Minor*.
 - c. If a competitor's ammunition cannot make *Minor* power factor, he can only Shoot Without Score (see Rule II.B.8).

D. Holsters, Magazine Pouches, and Miscellaneous Equipment Rules

1. **Concealment:** A competitor's equipment is considered *completely concealed from view* when the competitor can walk ten feet, arms stretched out to the side parallel with the ground, without his pistol, ammunition, or spare ammunition

carriers being directly visible to the Range Officer. The concealment garment does not have to be closed or able to close so long as it can conceal the gun per these rules.

2. **Holster position:** Holster may be placed at any location on the strong (shooting hand) side of the belt so long as it does not point at any other person while holstered or during the draw; and, so long as the gun and holster are completely concealed from view. The “shooting hand side” is the entire half of the belt from buckle to the center of the back.
3. **Retention:** Any holster used in KSTG competition must be capable of retaining the empty pistol when suspended upside down; any retention device used to retain the pistol for this test must be used by the competitor during any course of fire.
4. **Safety:** The competitor’s holster must completely enclose and protect the trigger of the pistol while holstered. The holster cannot require use of the trigger finger to disengage any safety or retention device (e.g., Blackhawk SERPA).
5. **Spare ammunition position:** Spare ammunition (pouches, etc.) may be placed at any location on the belt so long as all magazines and pouches are completely concealed from view. Competitors may carry as many spare magazines or speed loaders as they wish so long as all spare ammunition and pouches are completely concealed from view.
6. **Changing weapons:** A competitor can only use one firearm at a match. All stages must be shot with the exact same pistol without making any changes to sights, grips, or any other component except magazines. If a competitor’s gun breaks and cannot be used to complete a match, the competitor can use a gun of the same brand and caliber that qualifies for the same Division to finish the match.
7. **Flashlights:** Some stages may require the use of a flashlight, and it is the shooter’s responsibility to have a suitable light at every match. Mounted lights that attach to the pistol may only be used on stages in which the pistol begins out of the holster. This can include but is not limited to: starting in the competitor’s hands, lying on a table, or in a box or drawer. *Pistols must be unloaded and shown clear before attaching or detaching a light.* For stages that begin with the pistol in the holster, only handheld lights may be used.

II. Targets & Scoring

A. Targets

1. KSTG uses a standard IDPA target with the addition of a 3” x 5” white card placed in the center of the head box. The 3x5 card counts as an A-zone while the remainder of the head counts as the B-zone.
2. **Threat targets:** A target that is meant to be engaged is a *Threat target*.

- a. Any static target that a competitor is required to engage must have either one half of the torso A-zone or the entire head A-zone (3x5 card) visible to the shooter from at least one available shooting position.
 - b. **Disappearing target:** A moving target will be considered “disappearing” unless either one half of the A-zone or the entire head A-zone (3x5 card) remains visible after the target stops moving.
3. **Non-Threat targets:** A target which is not meant to be engaged is called a *Non-Threat target*.
- a. Non-Threat targets must be clearly identified with an “X” from shoulder to hips. This “X” must be clearly visible when viewing the A-zone of the target from any shooting position where the target is visible to the shooter.
 - b. If a Non-Threat target is placed downrange of any Threat targets on a stage, all Threat targets must have a clear line of fire through their A-zones from at least one shooting position. In other words, Non-Threat targets which are obscured by Threat targets must be positioned so that an A-zone hit on a Threat target can be made without striking any Non-Threat targets.
4. **Shooting zones:** Points are awarded depending on which zone is hit as follows:
- a. A-zone (8” circle and 3x5): 5 points
 - b. C-zone (area surrounding 8” circle): 4 points
 - c. B-zone (head outside of the 3x5): 3 points
 - d. D-zone (remaining body area): 2 points
5. **Hard cover:** Any part of a target which is colored black is considered hard cover. A full bullet diameter hit in the hard cover is considered a miss. Barriers and targets (or parts thereof) which are colored black are also hard cover and a full bullet diameter hit in the hard cover is considered “stopped” (no shoot-through).
6. **Reactive targets:** KSTG can use reactive targets such as pepper poppers, plates, etc.
- a. Any reactive target must fall to score. Failure to knock down a reactive target will count as five points down plus a Failure To Neutralize.
 - b. Steel targets should not be placed closer than 10 yards from a shooting position.
 - c. Reactive targets must be calibrated to fall if struck in the center with a round loaded to the Minor Power Floor +/- 5% (see Appendix A for Minor Power Floor) when fired from a designated test pistol. A shooter can only challenge the calibration of a target if it is left standing; knocking down the target during a course of fire cancels any challenge. If a target’s calibration is challenged, the Match Director will direct a match official or participant to fire one round at the center of the challenged target using the designated pistol and ammunition. If the round strikes the target at or below the center and the target falls, the challenger’s score will reflect a Failure To Neutralize plus five points down for that target. If the target

does not fall, the target will be recalibrated and the shooter will be allowed to shoot the course of fire again.

B. Scoring

1. **Match Score:** A shooter's Match Score is equal to the sum of each Stage Score. The shooter with the lowest Match Score wins.
2. **Stage score:** KSTG uses the Vickers scoring system developed by Larry Vickers. Stage score is time plus target penalties plus procedural penalties, expressed in seconds.
3. **Scoring targets:** A bullet hole that breaks the line between two scoring zones will be scored as hitting the higher value zone. If a Range Officer cannot clearly tell whether the line was broken when looking at the target from arm's length distance, the shooter is given the benefit of the doubt and the higher value is scored.
 - a. A bullet that strikes multiple targets will be scored for each target it hits ("shoot-throughs count").
 - b. If a bullet strikes a target at an angle, hits count for any shot that makes a hole less than 1" long.
 - c. **Head shots:** If a course of fire calls for head shots on a target, only hits in the upper A-zone (3x5 card) and B-zone will count. Hits to the torso will be scored as misses.
4. **Target penalties:**
 - a. *Accuracy:* There is a one second penalty per point dropped.
 - b. *Failure to Neutralize (FTN):* If a competitor does not score at least one A-zone hit on a target, there is an additional 5 second penalty. However, there is no FTN penalty for disappearing targets. See Rule II.A.2.b for definition of disappearing targets.
 - c. *Hits on Non-Threat Targets (HNT):* Hits on a Non-Threat will result in a penalty depending on where the target was struck:
 - i. A-zone: 20 seconds per hit
 - ii. B-, C-, or D-zone: 5 seconds per hit
5. **Procedural penalties:** For every Procedural penalty assessed on a competitor, an additional 5 seconds is added to his score. Penalties are assessed per target, not per shot fired. There are no warnings for Procedurals; as soon as a competitor violates a rule he is assessed the penalty. Procedural penalties include:
 - a. *Cover:* Failure to use cover properly will result in a Procedural penalty for each target engaged without using cover.
 - i. For vertical cover where a shooter fires around the corner of cover, a fault line will be used to indicate allowable foot position while

shooting around cover. Both feet must be on the ground while shooting from around the side of vertical cover. Shooters must engage targets in the order in which they appear as they move around cover.

- ii. For horizontal cover where a shooter fires over the top of cover, a fault line will be used to indicate the maximum height of the muzzle above the cover.
 - b. *Crowding*: When cover is available, the shooter's entire body and weapon must remain uprange of whatever object (wall, barrel, etc.) is providing cover. No part of the shooter's body or weapon can extend past the line of cover. Failure to do so will result in a Procedural penalty being assessed for crowding cover.
 - c. *Fault lines*: If a stage of fire involves fault lines (including a shooting box or other clear indicators of allowed foot position) then it shall be a Procedural to engage a target if any part of the foot is beyond the fault line when a shot is fired.
 - d. *Premature start*: If the shooter begins a course of fire before the start signal is given, he will be assessed a Procedural penalty.
 - e. *Rehearsal*: A shooter is not allowed to rehearse or "air gun" a stage. Doing so will result in a mandatory Procedural penalty.
 - f. *Reload Under Fire*: If a competitor is exposed to any Threat target which has not been neutralized, he will be assessed a Procedural penalty for performing any type of reload unless his weapon is empty (no round chambered). This penalty applies if any part of the reload from beginning (ejecting magazine or opening cylinder) to end (round chambered or cylinder closed) is performed when the gun is not empty. *There are no other limitations on when or how competitors may reload their pistols during a stage of fire*
 - g. *Shooting on the move*: If a stage description calls for a Threat target to be engaged while the shooter is moving, it shall be a Procedural to engage that target unless the shooter is moving when all shots are fired. "Moving" is defined as at least one of the competitor's feet moving forward, backward, or sideways as the shots are fired.
 - h. *Stage description*: Failure to obey the instructions that are part of a stage's description will result in Procedural penalty. E.g., shooting with two hands when instructions called for shooting one-handed.
6. **Did Not Finish (DNF)**: If for any reason a competitor cannot complete a course of fire, his score for that stage will be his elapsed time (if any), score on any targets which have been engaged (if any), plus all points down and Failure To Neutralize penalties for targets which have not been engaged.
 7. **Disqualification (DQ)**: A competitor will be disqualified if he:

- a. Violates any safety rule in a manner that endangers any person including himself, other competitors, Range Officers, and spectators. Breaking the 180 Rule (see rule II.D.1) is always an automatic DQ.
 - b. Violates any safety rule after being given a warning (such as “finger”) during the current course of fire.
 - c. Discharges a pistol unintentionally. Discharging a pistol in a Safe Area is an automatic DQ.
 - d. Discharges a pistol in a manner or direction that is unsafe. Firing a round that strikes the ground within 5 feet of any person; or, firing a round over/past a backstop which leaves the range area, is an automatic DQ.
 - e. Handles his firearm except during a course of fire, under the direction of a Range Officer, or in a designated Safe Area.
 - f. Behaves in an unsportsmanlike manner as determined by the Match Director.
8. **Shoot Without Score:** Should a competitor be unable to continue shooting a match for score due to equipment violations, he shall be allowed to finish the match but his score will not count. His name will be listed last on any score report, and instead of a score only “SWS” will be listed for stage or match results. He will not be eligible for any trophies. *This rule does not apply to competitors who are disqualified for safety or sportsmanship violations.*

III. Safety, Stages, & Matches

A. Safety

1. **180 Rule:** A competitor’s muzzle must never break the line representing a 180-degree arc downrange. No one (including the competitor and Range Officers) is allowed to be forward of that line while a competitor is shooting. If a Range Officer sees a competitor’s muzzle coming close to breaking the 180, he should give an appropriate warning (such as “muzzle”). *Breaking the 180 Rule is an automatic Disqualification (see rule II.B.7.a) regardless of why the rule was violated (e.g., dropped gun).*
2. **Cold Range:** KSTG requires shooting on a cold range. Competitors must arrive and leave each shooting bay with an unloaded gun (no rounds in chambers, no magazine inserted).
 - a. *Stage starts:* When running a Cold range, shooters must be given an opportunity to load their guns before shooting. It is in the Range Officer’s discretion whether to have all shooters set up simultaneously on the firing line before beginning a stage or one at a time when it is their turn to shoot.

When the shooter comes to the line, the Range Officer will ask “Shooter ready?” When the shooter indicates that he is ready, the Range Officer will call out “Standby” before the start signal is given.

- b. *Stage endings:* When running a Cold range, when a shooter has completed a course of fire he will be given the command to “Unload” at which time he will remove all ammunition and magazines from his gun. He will next be given the command to “Show Clear” at which time both the competitor and Range Officer will verify that no ammunition or magazines are in the gun before the shooter holsters his weapon. *Note that a shooter is not required to pull the trigger or drop the hammer/striker on his unloaded pistol before holstering so long as both the shooter and Range Officer have responsibly and positively checked the firearm to ensure it is unloaded.*
 - c. *Loading/Unloading Area:* The Match Director shall provide an appropriate location for competitors to unload their pistols upon arriving at the match and load them again before leaving. This can be done as part of the first and last stages of a match or in a separate designated location.
3. **Trigger finger:** A competitor should not have his finger on the trigger or inside the trigger guard except when firing at targets. When moving, reloading, clearing malfunctions, etc. the shooter must not touch the trigger. If a Range Officer sees a competitor violating this rule, he should give an appropriate warning (such as “finger”). A second violation will result in a Disqualification.
 4. **Gun handling:** A competitor is not allowed to handle his gun or remove it from its holster except under the direction of a Range Officer or in a designated Safe Area. Violation of this rule will result in an automatic Disqualification.
 5. **Age limit:** All KSTG competitors must be at least 14 years old. Competitors under the age of 18 must be accompanied by a parent or legal guardian at all times during a match.

B. Stages

1. **Walkthrough:** Every stage begins with a walkthrough. The course description and instructions are given, all targets are identified, and any moving targets are activated for demonstration. All shooters are allowed an opportunity to walk through the entire course of fire.
 - a. **Surprise stages:** While surprise stages add a level of realism and excitement to a match, it is impossible to guarantee that the stage is truly a surprise to all competitors. Therefore, surprise stages are not allowed in KSTG.
 - b. **Rehearsals:** While shooters are allowed to walk through the stage and see where all targets are located, they are not allowed to rehearse or “air gun” a stage before, during, or after the walkthrough.

2. **Round count:** Maximum of 10 targets per stage, and no more than 20 required shots per stage.
3. **Unlimited shooting:** Courses of fire cannot limit the number of shots a competitor fires on a particular target or for the stage as a whole. If multiple strings are shot on the same target(s), the target(s) must be taped between strings to avoid scoring confusion.
4. **Engagement order:** A stage description cannot require a specific order to engage targets. All targets are shot as they become visible, keeping in mind Rule II.B.5.a.i pertaining to proper use of cover.
5. **Mandatory reloads:** A stage description cannot mandate a reload at a particular time or position, nor can specific types of reloads be required. However, a stage of fire can begin with a specific number of rounds in the shooter's gun less than the normal Division maximum so long as all shooters are required to begin with the same number of rounds.
6. **Shots per target:** To avoid confusion or memory games, targets on the same stage should normally all require the same number of hits for score (e.g., best two hits per target). However, one target per stage can be identified as requiring a different engagement (six rounds; or, two plus one to the head) so long as that target is clearly identifiable by some sort of visual indicator such as a bandana, stripe of paint, etc.
7. **Moving targets & activators:** Moving targets are allowed and encouraged for KSTG competition. However, any target which must be activated (to begin moving after the start signal) must be initiated by the shooter. A moving target cannot be activated or controlled by a Range Officer.

C. Matches

1. Officials

- a. *Match Director:* The Match Director is responsible for running the match. All adjudications and judgment calls fall to the Match Director. The Match Director's decisions are final. Unsportsmanlike conduct toward the Match Director shall result in a Disqualification.
- b. *Range Officers:* Range Officers are the designated officials who run stages. Range Officers are responsible for enforcing all rules, maintaining safety, and directing shooters during a course of fire as well as tallying scores. If any Range Officer's decision is challenged, the Match Director has final say. Unsportsmanlike conduct toward any Range Officer shall result in a Disqualification.

2. Scores

- a. Scores shall be listed in order based on match score.
- b. The best score at the match is the High Overall winner.

- c. The best score in Master, A, B, C, and D Classes (excepting the High Overall) wins that Class. Note that there is no Champion Class trophy; Champion ranked shooters are eligible for High Overall, Specialty, and Recognition trophies only.

3. Trophies & Prizes

- a. High Overall Winner and Class winners all receive a trophy.
- b. If more than 5 people compete in a given Class (A, B, C, and D), there will be a 2nd Place trophy for that Class. If more than 10 people compete in a given Class, there will be a 3rd Place trophy for that Class.
- c. Specialty Divisions: To reflect the challenges involved in using certain popular handguns, trophies will also be awarded for the top shooters at a match shooting these handguns.
 - i. DA Pistol: To qualify, the shooter must use a Double Action semiautomatic pistol. “Double Action” is defined as a pistol which can strike the primer of the chambered round twice by pulling the trigger twice, with no other manipulation of the pistol (racking the slide, touching the hammer, etc.) necessary.
 - ii. Revolver: To qualify, the shooter must use a Revolver as defined in section I.B.
 - iii. Major caliber: To qualify, the shooter must be shooting a handgun that makes Major power factor as defined in the rules.
 - iv. There must be at least two competitors eligible for a particular specialty category to earn one of these awards. For 2-5 eligible competitors in that category, a 1st Place trophy will be awarded. For 6-10 eligible competitors in that category, a 2nd Place trophy will be awarded. If more than 10 competitors are eligible in the category, a 3rd Place trophy will be awarded.
 - v. Champion class shooters are eligible for these Specialty Division trophies.
 - vi. Shooters who win Specialty Division trophies are still eligible for all other awards at a match.
- d. Major sanctioned matches (State, Regional, and National championships) will also award the following Recognition Trophies. Champion ranked shooters are eligible for these trophies. Shooters who win Recognition Trophies are still eligible for all other awards at a match.
 - i. High Lady (female competitors only)
 - ii. High Senior (competitors age 55+ only)
 - iii. High Junior (competitors age 14-17 only)
 - iv. High Law Enforcement (full-time sworn law enforcement officers only)

- v. High Military (active duty military personnel only)
 - e. Prizes: KSTG matches may award prizes in addition to trophies. The manner in which prizes are distributed is left to the Match Director's discretion, except that at least 50% of the total value of prizes must be distributed by random drawing.
4. **Sanctioned Matches:** All major matches (including all State, Regional, and National Championships) must be approved and sanctioned by KSTG Headquarters and must comply with all Sanctioned Match rules (available from KSTG Headquarters).

IV. KSTG Organization

A. Membership

1. Only KSTG members can have valid classifications.
2. Only KSTG members can compete at major sanctioned matches (State, Regional, and National championships).
3. Only KSTG members will have their scores listed at matches.
4. Non-KSTG members can shoot local club matches and keep track of their own scores.
5. (membership procedures TBD)

B. Classification

1. There are five standard Classification levels in KSTG: Master-class, A-class, B-class, C-class, and D-class. In addition, a special Classification level, "Champion," is assigned under special circumstances.
2. KSTG members must shoot the classifier and be assigned a Classification to participate at KSTG matches.
3. **Advancement:** At any major sanctioned match (State, Regional, or National championships) in which there are 10-19 people competing in a particular Class, the top shooter in that Class will automatically be bumped to the next higher Classification. If 20 or more people are in a particular Class, the top two shooters will be bumped.
4. **Classifying (Master & A-D Classes):** To classify in KSTG competition, members shoot a simple course of fire.

- a. *Classifier course of fire:* An KSTG target is placed 7yds from the firing line with the top edge of the target five feet high. Shooter begins with a total of two rounds in his gun. On the start signal, shooter draws from concealment and fires two rounds (only) at the head of the target, performs a reload, and fires four rounds (only) at the body of the target. Score, tape target, and repeat for a total of three runs. This is scored as any normal KSTG stage with the total Classifier score equal to the scores for the three runs. The competitor must use the same pistol for all three runs. *Note that the Classifier is exempt from the prohibition on limited number of rounds fired, mandatory target order, and mandatory reload type/location.*
- b. *Classification:* Classification is based on the total of the three runs and the type of firearms used per the following chart.

Class	Semiauto	Revolver
Master	< 18.00 seconds	< 21.00 seconds
A	18.00 – 22.50 seconds	21.00 – 26.25 seconds
B	22.51 – 29.25 seconds	26.26 – 34.13 seconds
C	29.26 – 40.95 seconds	34.14 – 47.48 seconds
D	40.96 + seconds	47.49 + seconds

- c. **Classifying (Champion):** Advancement to Champion rank is based on match performance and works the same as with any other Class. If 10-19 Master-class shooters compete in a Division at a major sanctioned match, the top Master-class score is elevated to Champion rank; if there are 20 or more shooters at Master-class in that Division, the top two Master-class shooters are elevated to Champion rank.

Appendix A: Power Floors

Bullet weight (grains)	Muzzle velocity (fps) to make <i>Minor</i>	Muzzle velocity (fps) to make <i>Major</i>
115	1,087	1,328
124	1,044	1,279
125	1,040	1,274
127	1,032	1,264
130	1,020	1,249
135	1,001	1,226
147	959	1,157
150	950	1,134
155	934	1,097
158	925	1,076
165	905	1,031
170	892	1,000
175	879	972
180	867	945
185	855	919
200	823	850
230	767	767