

Mission Craze Bow Report

By Jon E. Silks

Mission is a company all about getting you in the game without breaking the bank. It is stated this way on the Mission website (www.missionarchery.com): To put it simply, we're committed to building the highest performing bows in your price range. We also provide the best customer service in the industry.

Their online presence is clean and clear just like the bows they offer. Straightforward, effective, easy on the wallet....Mission.

The company's new Craze is defined by its crazy adjustability! This bow can be set between 19 and 30 inches for draw length and 16 to 70 pounds (approximately) for draw weight – all without any extra/different cams, modules, limbs, strings, cables, etc. The Craze also features a reflex geometry aluminum riser, extended range limb pockets, one-piece composite grip, carbon composite cable rod, string D-Amplifiers and many finish options.

Mad Range

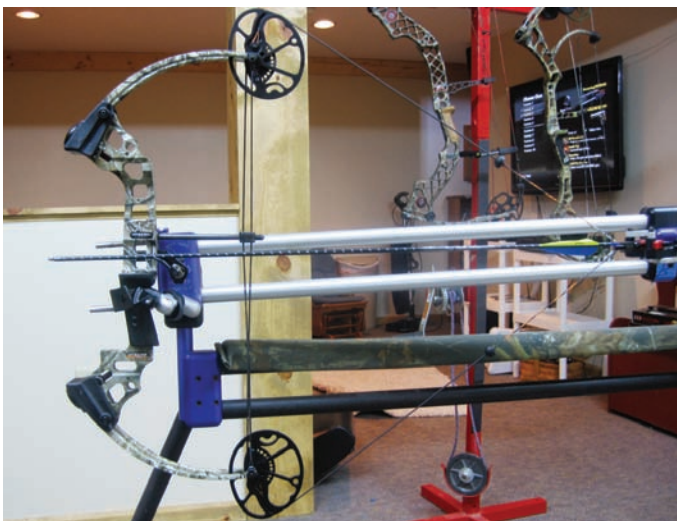
The extensive range of the Craze on both the draw length and draw weight fronts can be attributed to two features – the Craze CZ-2 Cam and the Craze Pocket. Before we get into that though let me give you an example of this bow's adaptability. After setting the test rig up for our adult-bow testing specs, running it through my computer-based performance assessment and recording IBO speeds at a 30 inch draw length and 70 pound draw my youngest son walked into the shop. Caleb is my



That is my 9-year-old son Caleb, who recently had a pin in his arm and still can't straighten it out all the way! He is pulling back the test bow at a 19 inch draw length and 16 pound draw weight – this is the same Craze that was sitting in my vise at 30 inches and 70 pounds just minutes before this picture was taken!

9 year old and he recently broke his arm in a wrestling match and had to have it pinned. The pin was removed a week or two ago and he is still working to get the joint back to its full range of motion. So, basically we have a disabled kid standing next to a full-out adult bow gripped in the vise on my shop bench. That got me thinking. I asked him if he wanted to shoot the bow. He responded by looking at me like I was crazy...like I forgot he had broken his arm. I took the bow out of the vise, quickly adjusted the rotating module to 19 inches and dropped the weight to 16 pounds. To make a short story shorter...see picture above! This is the same bow I just tested for IBO specs and I didn't have to switch out cams, limbs, strings/cables or anything else. All I did was remove a small screw from each cam, rotate the module and then crank down the weight.

The Craze CZ-2 dual cams consist of a machined aluminum body and molded composite module. Cams ride on steel axles and two bushings for reduced friction and wear. The rotating module has 12 holes running along its perimeter each with a corresponding number indicating its intended draw length position (19 to 30) in inches. A single hex head screw holds the module in place on the cam. To adjust you simply remove the screw, rotate the module to line up the desired draw length hole over the threaded hole in the cam and replace the screw



Spot Hogg's Hooter Shooter portable shooting machine is an important component in Arrow Trade bow testing. The use of a machine creates consistency and eliminates human shooting form error. This picture also gives you an idea of just how compact the Craze is at 28 inches axle-to-axle.

Bow Specifications			
Manufacturer:	Mission Archery		
Model:	Craze		
Website:	www.missionarchery.com		
Draw Weights	16 to 70 lb	Finish	Lost Camo plus others
Draw Lengths	19-30" modular	Grip	One piece molded comp
Axle-to-axle length	28"	Riser	Reflex, Aluminum
Brace Height	7.5"	Limb Pockets	Full Capture, Composite
Mass Weight	3.6 lbs	Limbs	Split, composite
Let-off	Up to 80 percent	Cable Guard	Carbon rod and slide
Advertised IBO	Up to 306 fps	Warranty	Lifetime
Eccentrics	Craze MA-2 Dual Cams	MSRP	299.99!!
Strings/Cables	Zebra		



and it's done. Make sure to adjust the module on both cams. The Craze Cam system produces an advertised 80 percent letoff and features a timing hole that offers a quick reference for the shooter that assures his/her rig is set for optimum performance. A look through each hole should reveal the cable positioned on the centerline.

The Craze Extended Range Pockets do just that – they extend the range of limb position needed to move the draw weight through its range while maintaining control of the limb movement throughout the draw weight adjustment process. Craze Pockets are made of a composite material that is molded into its final shape. A pin in the pocket holds the limb to pocket interface at a constant. Pockets are deep to allow control gained through position with the riser even at the lowest weights. All of this coupled with the section of the pocket that maintains spacing between the limbs boils down to control. Control is needed to preserve accurate and repeatable positioning at the critical limb to riser interface. The overall draw length range is approximately 16 to 72 pounds, however, that range moves depending on draw length:

Draw Length	Peak Weight	Min. Weight
30"	72	34
29"	72	32
28"	72	31
27"	72	30
26"	71	28
25"	70	27
24"	67	26
23"	64	24
22"	60	22
21"	56	20
20"	51	18
19"	46	16

Limb bolts can be turned nine revolutions from the peak weight position. Few people will be able to comfortably draw a weight more than offered by the Craze. My middle son Michael had the ability to pull 65 pounds when he was just 12 years old and had a 23 inch draw length. Even with this unusual ability he would have only exceeded the weight available with the Craze setup by one pound. The draw weight ranges offered will easily cover the majority of archers.

The Craze Quad limbs also play a part in draw weight adjustment (clearly). Limbs are straight in form (not recurve) and split (not solid). Each limb measures 13 inches in length and is manufactured with a composite material. Each limb set is matched based on the deflection values of the four individual limb pieces. This provides consistent performance. Limb ends are fitted with a metal component that caps the limb and harnesses the axle. Limbs are obviously stout enough to handle the 70 – 72 pound peak weight and the long limb bolt plus extended pockets



The amazing Craze MA 2 dual cam system has a tremendous draw length range on one cam using a rotating module. Draw lengths are available from 19 to 30 inches in whole sizes.

allow them to be relaxed enough to require only 16 pounds of force to turn the cams over at the lowest setting. At the upper weights Craze limbs reach a parallel position at full draw creating a reduced level of shock and vibration at the shot.

Talking Points (Notable bow features to bring up during the selling process)

- The adjustability of this rig is incredible and opens up doors to more applications than previously offered from one bow – especially considering that to reach the full range of both draw length and draw weight all you need are just two hex wrenches. You can literally buy this bow for a 7 or 8 year old and expect that it could be the only bow they will ever need. And the best part – only \$299.99 for a bow that will shoot up to 306 fps at IBO specs.
- In addition to the great range is the quality and engineering that the Mission engineers bring to the table. You get a super solid bow for a great price. If we had a Best Buy award this bow would be in the running for the crown.

Rounding Out the Package

The Craze is centered on an extruded aluminum riser that sports a reflex geometry. All else being equal a reflex geometry produces higher speeds as compared to a deflex riser through an increased power stroke. The riser includes the standard accessory holes plus front and rear stabilizer mounting holes and holes that work with the Mathews style quivers. Mission uses a one-piece rubber composite grip that produces a neutral hand position at full draw. The rubber composite material is slick enough to allow the shooter's hand to seat consistently while providing warmth on those cold days afield. Zebra Hybrid cables run through the cable slide situated on the straight carbon cable rod. The orange/black twist string is also a Zebra Hybrid. Other

than the parallel position of the limbs the only other vibration dampers are two D-Amplifiers on the string, one above and one below the nocking point. As you would expect with a bow that can fit just about anyone the Craze also has many finish options: The riser is available in Lost Camo AT, in Lost Camo AT Pink, in basic Black, in Pink Lemonade, Royal Blue, Black

Mission uses a deep full containment pocket on their Craze to allow for a wide range of draw weight adjustment while maintaining control of this critical interface. Pockets are made of molded composite.



Cherry and in Blueberry. The two camo options are film dipped, while the Black Cherry and Blueberry are anodized (added cost) and other colors are powder coated. Limb finishes are available in Lost Camo AT, Lost Camo AT Pink, Black, Pink and Blue.

Arrow Trade Talking Points

- The short extruded aluminum riser is strong and plays its part in the super short axle-to-axle length of 28 inches. The reflex geometry results in a longer power stroke and decent speed.
- The molded rubber composite grip is well rounded and comfortable. No, it is not a special two piece laminated wood grip with fine machining detail but you have to ask yourself...is a wood grip worth another three to six hundred dollars? This is a functional grip that will get the job done.
- The string D-Amplifiers work with parallel limbs (at upper weights) to reduce the vibration and noise.
- With all of the finish options available there should be something for just about anybody.

Test Parameters

- Bow weight: 70 pounds +/- 0.1 pounds
- Draw Length will be set to 30" (+ 0.25" -0.00")
- Properly spined arrows will be selected according to the formula set out in the I.B.O. rules for minimum grains per pound (350 grains)
- All arrow velocity ratings must be measured using a shooting machine with mechanical release
- A minimum of five shots must be chronographed using an arrow as defined above. The five shots will then be averaged to obtain the final result. All velocity values for a given arrow must fall within a range of 2 ft/sec
- A chronograph with a minimum of two gates set no more than 48" apart will be used. The initial gate will be set at 36" from the front of the bow's handle.

Test Method

- Just to make sure the bow is at least in the right ballpark the draw weight and draw length are roughly verified with Easton's Hand Held Bow Weight Scale and a simple draw length arrow correlated to a mark on the shelf adjacent to the deepest part of the grip. This saves me a lot of time if the bow is not close to the right draw length or draw weight.
- Brace height is tested using calibrated dial calipers
- Install New Archery Products Quik Tune 3000 Arrow Rest
- Set nock point
- Verify draw weight using a calibrated digital force gauge backed up with the Easton Bow Force Mapper (BFM) System handheld unit
- Verify draw length using the Silks Outdoors Bow Analysis Program, which is a combination of a custom software package, modified Apple Bow Drawing Machine, Chatillon digital force gauge, calibrated 36" steel rule and trammel point
- Mark cams at full draw
- Paper tune by hand
- Set bow on Spot Hogg's Hooter Shooter portable shooting machine – draw to cam marks and fire through two chronographs – Oehler and Easton. Both chronographs are equipped with indoor lighting kits.
- Speed is recorded from the average of 5 shots.

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Velocity Test Results					
	350 Grain Arrow		425 Grain Arrow		540 Grain Arrow
Shot # 1	305		282		253
Shot # 2	304		281		253
Shot # 3	305		281		253
Shot # 4	305		281		253
Shot # 5	306		281		253
5 Shot Total	1525		1406		1265
Average Velocity	305		281.2		253

Comments

This bow is just good for our sport. Want to try out archery? Want to try out bowhunting? Want to get someone you know involved? This bow fits the bill – it basically doesn't matter who you are in regard to size, strength, etc. All you need is \$299.99 and you can jump in the game. Also, you can stay in the game even if you are a youngster who is going to grow like a weed. No more balking on the decision to buy a bow for a young person wondering if your money will be wasted when they hit a growth spurt.

Testing

A single brass nock and QuikTune 300 Arrow Rest were attached to the bow – nothing more. With the exception of these two items every bow is tested, as it

Mission outfits the Craze with a molded composite grip. This one-piece unit is comfortable and functional. You will especially appreciate the protection it provides on those cold days afield.



would be shipped to the dealer or customer. In other words, if it has string silencers or other components pre-installed it is tested with them installed. While the "official" velocity rating for our calculations will be taken with an arrow as defined below, we will also use two other test arrows as reference points. This will be done to bring a bracketed

picture of the bow's speed performance to the reader. Test arrows include a lightweight 350 grain arrow, a mid-weight 425 grain arrow and a relatively heavy 540 grain arrow. Before recording speeds with these arrows the bow was first paper tuned with each one. Most every bowhunter and recreational archer will be able to extrapolate their approximate arrow speed in relation to similar set-up parameters and results presented from the

TestID:	misscraze2	Draw Length:	30.125"	Speed:	305 ft/sec
Tested By:	jes	Brace Height:	7.375"	Power Stroke:	1.75'
Min Load:	21 lbs	Max Load:	70 lbs	Kinetic Energy:	72.31 ft-lbs
Min Pos:	30.125"	Max Pos:	21.00"	Stored Energy:	89.96 ft-lbs
				Dynamic Eff.:	80.38%
Distance (in)	Load (lbs)			Brace Height:	▲
9.125	0.00			Peak Draw Weight:	▲
10	6.90			Full Draw Condition:	▲
11	16.70				
12	27.10				
13	40.60				
14	54.30				
15	62.70				
16	67.70				
17	69.40				
18	69.60				
19	69.50				
20	69.70				
21	70.00				
22	69.50				
23	68.20				
24	66.00				
25	62.40				
26	56.80				
27	49.30				
28	40.40				
29	29.30				
30	22.30				
30.125	21.00				

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three test arrows. The 70 pound velocity tests are detailed in the chart at the left side of the previous page.

The speed result from the 350 grain arrow is entered into the Silks Outdoors Bow Analysis Program, which then automatically calculates Kinetic Energy, Stored Energy, and Efficiency. Those results are seen in the large chart at the bottom of the previous page, where the force draw chart is also portrayed.

Since the Craze is both an adult bow and a short draw archer's/youth bow I also tested the speed at alternate settings. Three different draw weights of 40, 45 and 50 pounds were tested with two arrows of different weights, 275 and 325 grains (approximately). This should give a broad picture of what can be expected from this bow in terms of speed generated by various setups. Following are the charts showing resulting speed ratings for each in feet per second.

Potential customers will generally make their bow purchase

Velocity Test Results			
50 Pounds	275 Grain Arrow		325 Grain Arrow
Shot # 1	211		198
Shot # 2	211		197
Shot # 3	211		197
Average Velocity	211		197.33

Velocity Test Results			
45 Pounds	275 Grain Arrow		325 Grain Arrow
Shot # 1	198		185
Shot # 2	198		185
Shot # 3	198		185
Average Velocity	198		185

Velocity Test Results			
40 Pounds	275 Grain Arrow		325 Grain Arrow
Shot # 1	187		177
Shot # 2	188		176
Shot # 3	188		176
Average Velocity	187.66		176.33

choice based on several factors including the cost, speed, shot noise, shock/vibration level, grip and the draw cycle.

In our bow testing for *ArrowTrade Magazine* we try to give you a feel for how a bow performs in the “subjective” areas mentioned above. You can then focus on the bow's notable subjective points when inter-

Objective Test Categories

Kinetic Energy: 72.31 foot-pounds

This is the energy that actually goes into propelling the arrow. Basically, it is the energy that is left over from the stored energy after all of the bow system friction is accounted for.

Stored Energy: 89.96 foot-pounds

When a bow is drawn energy is supplied to the limbs. The amount of energy that the limbs can hold is the stored energy

Efficiency Rating: 80.38 percent

This is the amount of stored energy (in %) that can be successfully transferred into propelling the arrow upon release. The bow design, including limbs, limb pockets, cam systems, and axle types play into the bow's efficiency.

SE/PF Ratio: 1.28

This is the ratio of stored energy to peak force. In other words, what returns are you getting for the power you supply?

acting with your customer. The term “subjective” can basically be translated into “opinion”. The Mission Craze is a good performer regardless of price and especially considering the price. Many subjective aspects of this rig depend on the setup. It is generally average in the subjective categories at the higher weights and better than average at the lower weights. The draw cycle, however, was smooth at all weights. Two things to keep in mind when assessing this bow are the price, only \$299.99, and the incredible adjustability. This bow is downright inexpensive in relationship to most any other bow out there and it will fit a little 7 or 8 year-old kid one minute and an average archer the next. I think customers will find quite a few applications for this bow.

Subjective Test Results

Shot Noise:

Really depends on the setup of this rig, however, it is very quiet at the lower weights and average at the higher weights.

Grip Comfort and Function:

The grip is functional and adequate. Of course I prefer a wood grip, however, I cannot hold a sub-\$300 bow to unreasonable standards. The grip works!

Draw Cycle "Feel":

Again this is dependent on the setup. Regardless though I would consider it to be better than average. Take a look at the draw cycle graph for a snapshot at 70 pounds

Shock and Vibration Levels:

Setup dependent. Basically the levels are average at the higher weights and minimal at the lower weights.

About The Author

Jon E. Silks has a degree in Quality Engineering and much of his career has centered around the testing and evaluation of products. Now 41, he's been bowhunting since age 12. Silks started writing for magazines and websites 10 years ago and since then has done more than 500 product reviews. Manufacturers who appreciate his thoroughness and frankness have often asked him to conduct third-party testing of their prototypes. Silk's work has appeared on the web on Bowhunting.net and Bowsite.com and has been published in *Petersen's Bowhunting*, *Bowhunter*, *Arrow Adventure* and *Whitetail Fanatic*, along with *ArrowTrade*. Jon and Jennifer Silks have six children and live in Pennsylvania. Silks can be reached at jon@silksoutdoors.com.

