CJKC Conducts Jr-1 Engine

(Obtained with permission from the International Kart Federation, *Karter News* Magazine, February 2010 issue)



By Eric Cody
Photos by Ryan Hiatt

The test engines are inspected before the test.

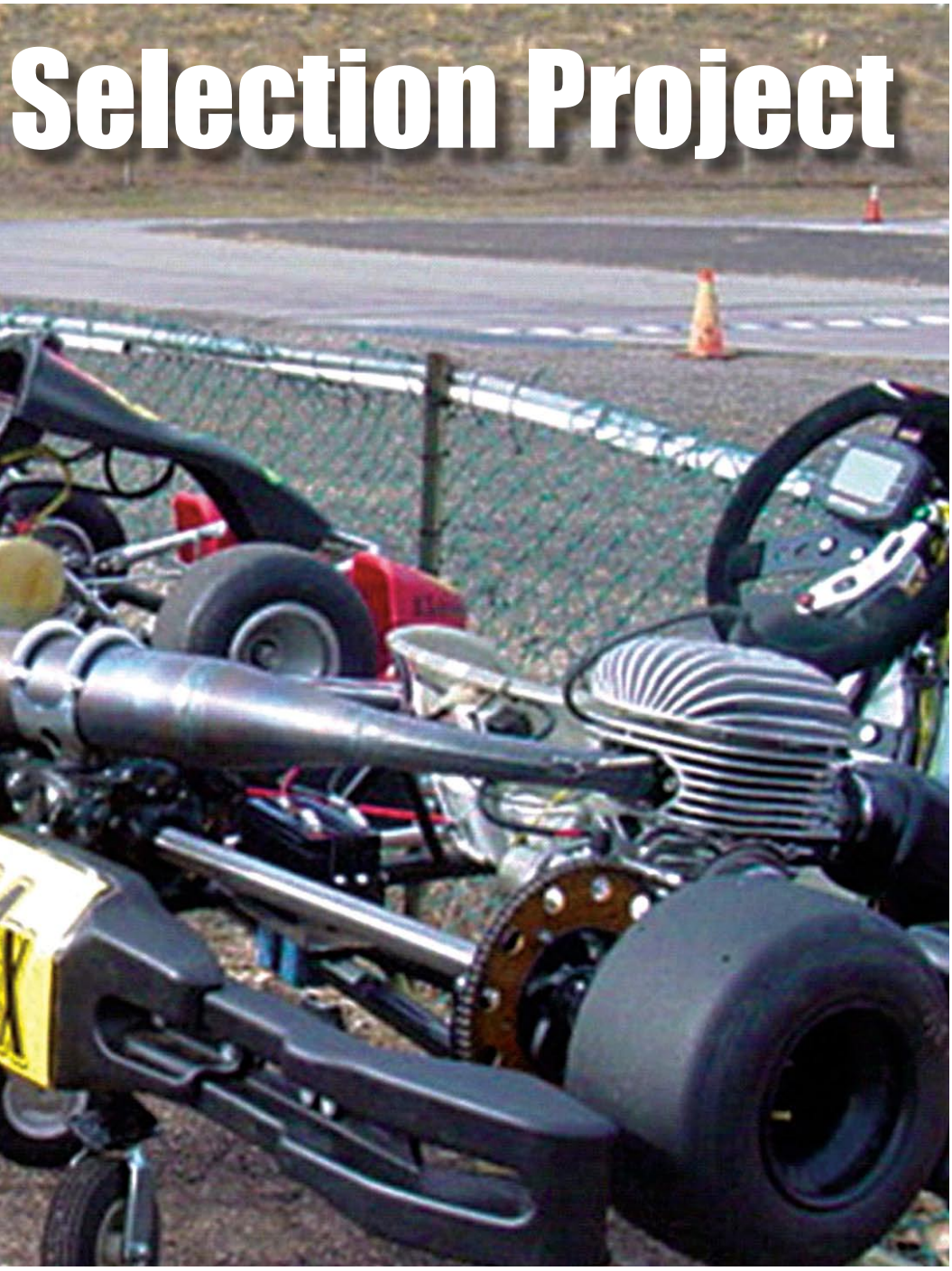
The Colorado Junior Karting Club (CJKC) is an organization created to provide an opportunity for young people and their families to experience and grow in the sport of Karting. The club is solely focused on "Jr" drivers ages 5-15 within the Kid Kart, Jr-1 and Jr-2 classes. Established in 2007, the club conducts organized practice sessions, training events and organizes Kart racing events throughout the state of Colorado. The CJKC is sanctioned by the International Kart Federation and its eight race series comprises the IKF-4A Junior Karting Championships.

The club has experienced incredible growth in its first three seasons of operation. The first season began with just a handful of Kid Kart and Jr-1 participants, but as word spread of the camaraderie and professional manner in which the series was run, young racers began to migrate to the club. The 2009 season saw consistent fields of 15 Kid Karts, 5 Jr-2s in its inaugural year for that class and strong 24–28 entry fields in Jr-1. The club also organized a group of participants who raced in the IKF 2 Cycle Grand Nationals in '08 and '09.

The Engine Dilemma

One of the leading objectives, which helped establish the CJKC, was creating a stable platform for families to

Selection Project



enter the sport. Central to this was the issue of value relative to the significant investment required to go racing. The club wished to establish an equipment package for a minimum of three years allowing families to amortize the startup cost over several seasons. Prior to the CJKC, some families were forced to update equipment on a yearly basis resulting in higher costs and the eventual fragmentation of classes, so engine stability was an important goal. In 2007 the club committed to the Comer C51 for Kid Karts and the Comer K80 Jr-1 engine package for a minimum of 3 years. Availability of engines, parts, and the recognition of most sanctioning bodies were prime motivators in this original decision. Operating under IKF rules, the club saw participant's present engines with various levels of preparation. Members would compete with stock engines fresh out of the box, others had used ones purchased with the kart, while some would have professionally blueprinted, prepared and maintained engines. As with any reputable series, a technical inspection program at each event was provided and the club has never had any significant problems with illegal engines. However, the cost to be competitive has increased significantly over the past few years and there has been growing concern regarding engine parity, (particularly in the Jr-1 class) which is critical to the club's inclusive and developmental mission.

Unlike some racing series, the CJKC is not owned or operated by a track, race shop, or combination of the two. This unique arrangement allows the club to make decisions primarily based on membership objectives as a whole minimizing the influence of potential windfall to self interest. The first step in the engine review was to gather the thoughts and concerns of the membership on topics ranging from cost control to their future racing aspirations. This was done by issuing a comprehensive survey to all members of the club. While this survey did not ask for engine recommendations by name, the survey was geared to determine what level of cost control, equality, sanctioning, and performance the members wanted as they entered the next three to five year commitment cycle. The intent was to use the results of the survey to evaluate the potential engines available to the club and were asked how much they agreed or disagreed with questions such as:

"I would like to have an engine that will last one full season with only small maintenance." -This question was almost unanimously supported.

"I want an engine that is sanctioned by a national governing body." This was an important concern overall.

"I would like to have an engine that is sealed and cannot be opened for internal adjustments by the owner or professional tuners." – A majority of club members support the concept of a sealed engine program.

The Engines and the Test

Immediately after the season ending "Family Celebration and IKF Awards Banquet," the club began to solicit engines for consideration for the Jr-1 division. The club was open to evaluate any and all engines that are considered appropriate for this class and age group. The club received the following 7 engine combinations to evaluate on the track:

- **Blue Max Honda Clone**
- **Honda GX-200, Stock Production Locally Sealed**
- **Briggs Racing LO206, Factory Sealed**
- **Honda GX-200, Locally Race Prepared, Locally Sealed**
- **Rock**
- **IAME Gazelle**
- **Comer K80, Stock Production with Vevey Pipe, Locally Sealed**

Unfortunately, two other engine combinations, (Yamaha KT100 & Rotax) that were promised to the club did not arrive and therefore not evaluated. The current Jr-1 club engine, an IKF/WKA legal Comer K80 was not officially evaluated as the club felt it had plenty of data from three years of racing that same combination. However, there were several club members who brought their Comer K80's to the track for the test day and were running with the test motors during the sessions for comparison.

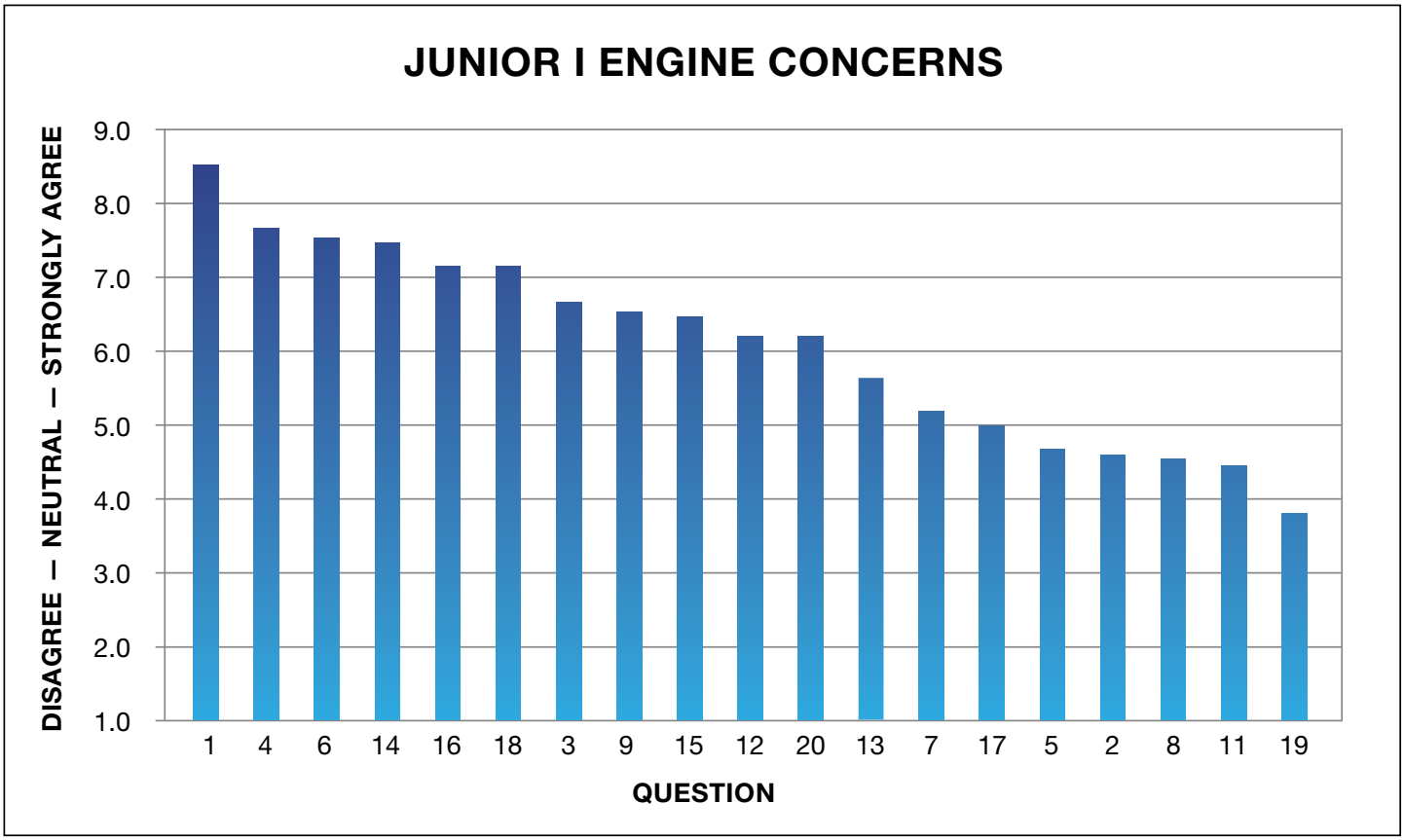
The aim of the engine test was to evaluate how each of them performed with different drivers of various abilities. The club invited all current Jr-1 drivers to participate in the test with 18 drivers, including the top 5 finishers in the IKF regional championship, taking advantage of the opportunity. Each engine was mounted to a prepared chassis and the drivers were cycled through for one session with each motor. The club felt that by keeping each engine attached to the same kart and cycling the drivers through, they could eliminate the driver's own chassis as the reason for a driver's times. Transponders were also attached to keep track of lap times for each driver/engine combination.

The club was extremely impressed with the reliability and strength of each motor with no engine failures or problems during the entire test. The club was additionally impressed with how easy some of the motors were to tune. The reaction of the parents to each of the engines was also closely watched. The club was interested to gauge the level of acceptance of the parents to each engine as some had only raced the current Comer K80 since they began Karting. It was refreshing to see some of the parents open up to other engines and embrace ideas such as single-jet carburetors, belt drives, and sealed combinations. It was also interesting to see some of the drivers really blossom with the different engines. There were the usual fast drivers running good times, however some of the drivers who typically were not at the front of the field were right with the faster drivers, which was one of the objectives the club was hoping to see.

The lap times were also meticulously kept and evaluated. The club was specifically looking to see which motors produced the most consistent lap times across all drivers and there were some surprising results. Some drivers were actually faster with motors of lower horsepower ratings. Interesting but perhaps not surprising, was how different engines were faster in different parts of the racetrack. For example, in several sessions, the Briggs LO206 was able to gain up on the IAME Gazelle in the tighter cornering sections of the track while the Gazelle would pull away on the faster straight sections. Amazingly, the overall lap times were fairly close for all of the engines across all of the drivers. *(continued page 14)*

AVERAGE TIMES OF ALL DRIVERS FOR EACH ENGINE TESTED

	DRIVER TYPE			
ENGINE	**A**	**B**	**C**	**ALL DRIVERS**
THE ROCK	50.92	52.66		51.25
BRIGGS LO-206	51.96	51.25	52.93	52.05
STK. COMER-VEVAY		52.26		52.26
IAME GAZELLE	52.40	54.19		53.08
IMI HONDA GX200	51.60		54.71	53.23
STK. HONDA GX200	52.90		54.10	53.88
GRAND TOTAL	**51.68**	**52.78**	**54.09**	**52.62**



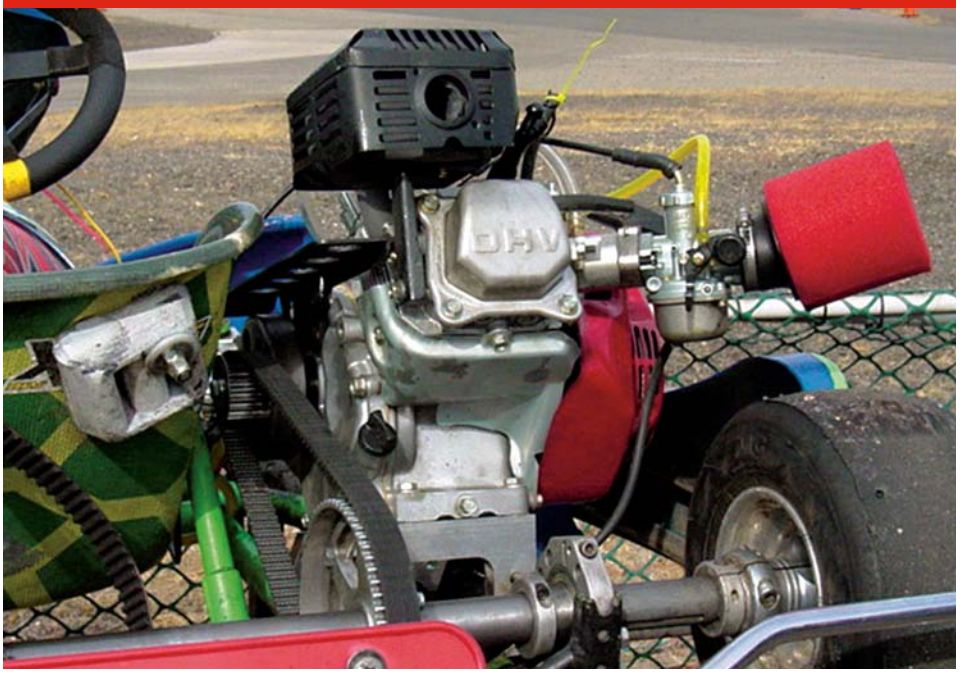
QUESTIONS

1. I would like to have an engine that will last a full season with only small maintenance.
2. I prefer to have a wide range of carburetor adjustments available to tune the engine.
3. I want a motor that is sanctioned by a National governing body (IKF, WKA, SKUSA, etc…).
4. I feel that the club should assure that no one has an engine more powerful than anyone else.
5. The ability to sell my engine when I am done racing is a strong consideration to me.
6. I would like to have a motor that is sealed and cannot be opened up for internal tuning/ adjustments.
7. I plan to race my Kart/engine at other races in addition to CJKC events in 2010.
8. I believe we should establish a top speed for the Karts and configure an engine to not exceed this speed.
9. I feel as though I spent too much time working on my engine to stay competitive in 2009.
11. I want to be able to have my engine blueprinted or tuned by a professional within the rules of the club.
12. We have aspirations for our driver outside of local club racing.
13. I would like to have a gear specified for each track.
14. The club should do all it can to limit the cost of ownership (price, maintenance, parts, ect..) on our engines.
15. I feel confident in my own abilities to tune an engine.
16. I would like to have an engine that can be used as my driver moves up from Kid Kart to Jr-1 and beyond.
17. I plan to do overhauls or rebuilds on my motors one or more times per year.
18. I have been frustrated over inequities in engines in our series.
19. I have no problem with a driver benefiting from having a strong engine tuner in this series.
20. Racing in an IKF sanctioned series enhances our enjoyment of the CJKC.

The Final Step

Next, came merging the survey results and the test session data. The club then met as a group to review these critical pieces of data as well as overall recommendations from the club leadership team. The first question was to establish whether or not a change was warranted and if so, which of the engines researched and tested best fulfilled the club's criteria and to announce the 2010 program prior to January 1st. With all the data and survey results compiled the leadership team made a presentation and recommended that the Briggs racing LO206 was the logical choice and that based on its reasonable price point, should be implemented in time for the start of the 2010 racing season. A subsequent vote was then held which resulted in an 18 to 3 vote in favor of the Briggs Racing LO206. We will also note that based on the strength of the LO206, a parallel review and test in the club's 12-15 yr old class took place resulting in an almost unanimous decision to convert that class from TAG-Jr, (primarily Leopards) to the Briggs CIK World Formula and will now be called "Jr-2" also beginning in 2010.

This Honda was tested with a belt drive which was well received for club racing.



The process of surveying, tallying, soliciting, testing, combining and weighing all of the available information ended up being quite a project and to our knowledge, had never been done before, but the CJKC feels that it was not only worth the effort but necessary in order to legitimately address the concerns and issues that are critical to the survival and growth of Karting.

The Colorado Junior Karting Club would like to thank all of the suppliers and club members who generously supplied engines, equipment, and the valuable assistance that enabled this one of a kind engine review. Additional information on the Colorado Junior Karting Club can be found on the club's website at: www.coloradojuniorkartingclub.com



The drivers wait to take to the track for another test session.