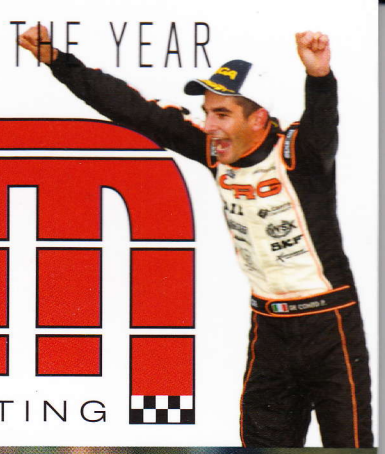


SPECIALE PALMARES PAOLO DE CONTO DRIVER OF THE YEAR

# VROOM

WWW.VROOMKART.COM

INTERNATIONAL KARTING



## NEW HOMOLOGATIONS

Time for Cik-Fia homologations for the next three years: it's the chassis and accessory's turn 2018. Here we are giving you a preview of next year's innovation (part 1)

## Grand Finals

Exciting races decided on the last lap were seen at the 18th edition of the Rotax Max Challenge Grand Finals in Portimao. To be continued...

**TRACK TEST DR1 AND DR7 AXLES**



N. 198  
DECEMBER 2017  
€ 5.00  
(ITALY ONLY)

## 1962 IKF WORLD CHAMPION, CLASS A UNLIMITED



1

# The 1962 Go Kart 1200

Vintage karting enthusiast Scott Wigginton is the owner of ASW R & D Machining, a full service shop offering design prototype and production machining located in Santa Clara California. ARTICLE BY: FRANK WEIR

Some time back Scott was searching for a vintage kart to restore for himself but there was nothing in his locale then that appealed to him. Occasionally you just can't see the wood for the trees. Scott discovered that his shop landlord George Jelich owned a pristine example of a 1962 Go Kart 1200 which had been crowned A Unlimited World Champion that year at a big IKF event held in Las Vegas. Scott then had the idea to re-manufacture the kart thinking that it would be equally as convenient to manufacture a batch as a single kart knowing that there were other vintage enthusiasts on the lookout for such a model. Today the Go Kart 1200 is considered by vintage kart-

ing enthusiasts to be one of the best rear engine karts ever made.

Scott borrowed George's kart so that all the dimensions could be collected and detailed drawings produced that would enable the kart to be accurately reproduced. To facilitate the collection of the dimension data the donor chassis was first mounted on a flat granite surface base. Each part of the kart, steering hoop, seat hoop, chassis rails etc were measured using conventional means such as caliper, scale, tape rule, protractor and height gauge.

Next all the measured dimensions were used to produce working drawings using AutoCAD. This task was undertaken by a

colleague of Scott's named Glenn Davis nicknamed Bubba, also a huge vintage karting enthusiast. Incidentally Bubba is no relation to that other Californian Glenn Davis who drove a kart around the world in 1961/62.

The chassis materials used in the 1962 main frame called for 1 inch diameter by 0.096 4130 chrome moly tubing. The steering hoop and seat back hoop were fabricated from 0.625 inch and 0.75 inch diameter mild steel tubing respectively; Scott substituted 4130 for the mild steel in the re-production mode and used 0.085 inch wall thickness for the 1 inch diameter main rails. Sourcing a company to bend the tubing took some time. There

were loc  
were eith  
or didn't  
the very  
chassis  
ing Scot  
Aero Tub  
nia. That  
aircraft r  
cal that t  
detailed  
ings, sam  
for forme  
vided to  
3 months  
bend of  
chassis le  
was a thr  
made out  
legs were  
of tubing  
that Go K  
the late D  
Go Kart w  
to handle

In the  
welding j  
machined  
to provid  
Haugner,  
ast, was r  
operation  
to enable  
be welded  
dinal cha  
cated so t  
tabs coul  
steering h  
carry the  
on to the  
the tabs  
who was  
welding  
liability  
Mountain

Aviation  
ing shop,  
were TIG  
rod which  
welding.

Once th  
then card  
vide patter  
were fabri  
Computer  
shapes on  
keep wast  
seating an  
steel sheet  
was a we  
saving wa  
neering th

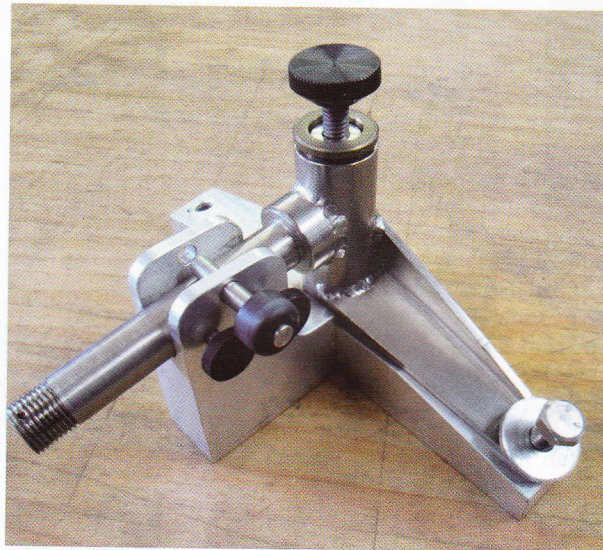
were local tube bending companies that were either too expensive, not interested, or didn't understand the importance of the very accurate bends required for the chassis reproduction. After much searching Scott found a company online called Aero Tube Bending in Lancaster California. That area of California specializes in aircraft manufacturing so it seemed logical that the work could be done exactly as detailed on the drawings. AutoCAD drawings, sample parts and Go/No-Go gauges for formed tubes to drop into were provided to the company and a lead time of 3 months was provided. The compound bend of the sissy rail part of the main chassis leg was a real challenge since it was a three axis bend; Scott's sample was made out of three pieces. The production legs were formed in two continuous length of tubing using a CNC bender something that Go Kart did not have back in 1962; the late Duff Livingstone, the principal at Go Kart was certainly one gifted engineer to handle such intricate bending.

In the meantime a generic turn-over welding jig was made ready. Tooling was machined to mill and cut the tubing ends to provide joints that fitted exactly. Jim Haugner, also a vintage karting enthusiast, was responsibility for this part of the operation. Additional tooling was made to enable the rear axle bearing hangers to be welded accurately to the main longitudinal chassis rails and a shaft was fabricated so that the steering column support tabs could be accurately attached to the steering hoop and front axle. The tabs to carry the seat and belly pans were welded on to the chassis using those items with the tabs attached. After the first welder who was approached to undertake the welding relented on the work because of liability concerns Advanced Welding in Mountain View California, an Federal Aviation Administration approved welding shop, undertook the work. The frames were TIG welded using a stainless steel rod which did not require annealing after welding.

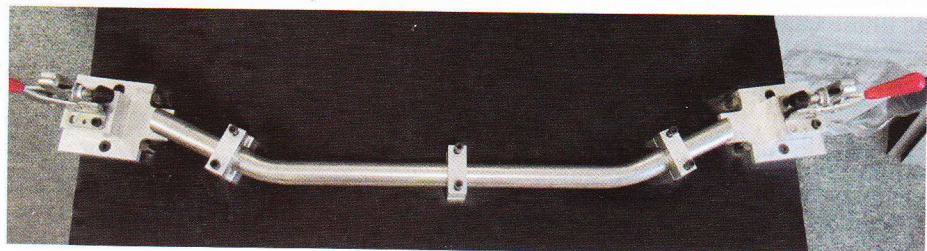
Once the frames were welded together then cardboard templates were cut to provide patterns for the floor and seat which were fabricated from 16 gauge sheet alloy. Computer software was used to layout the shapes on the standard alloy sheet size to keep wastage to a minimum. In 1962 the seating area was fabricated using mild steel sheet so using the alloy sheet instead was a weight saving. Additional weight saving was also gained by reverse engineering the steel Azusa engine mount and



2



3



4

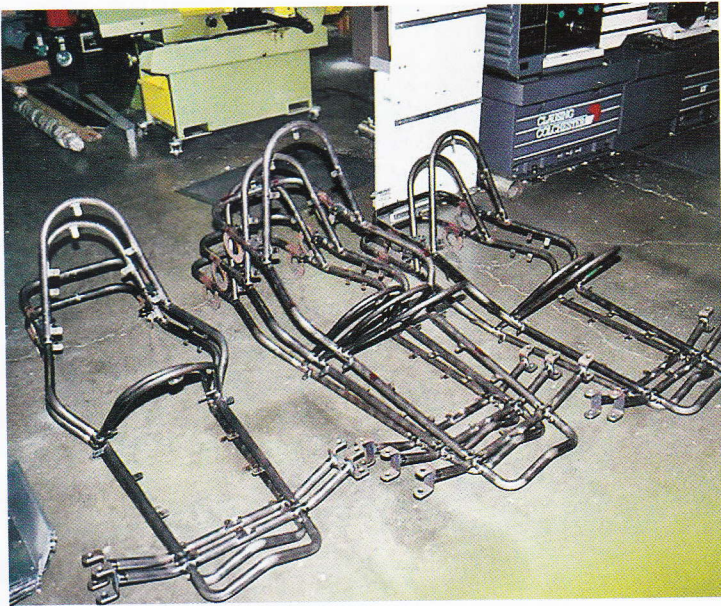
1. The new Go Kart 1200 is the only production kart that meets every IKF competition spec and bears the IKF Competition Approved Seal. The 1200 is solid completely ready to race.
2. It's yesterday once more, the re-manufactured 1962 Go Kart 1200 dual West Bend 820's.
3. Welding fixture for spindles.
4. Welding fixture for front axle.

fabricating a laser cut replacement using 3/16" thick 5052 aluminum.

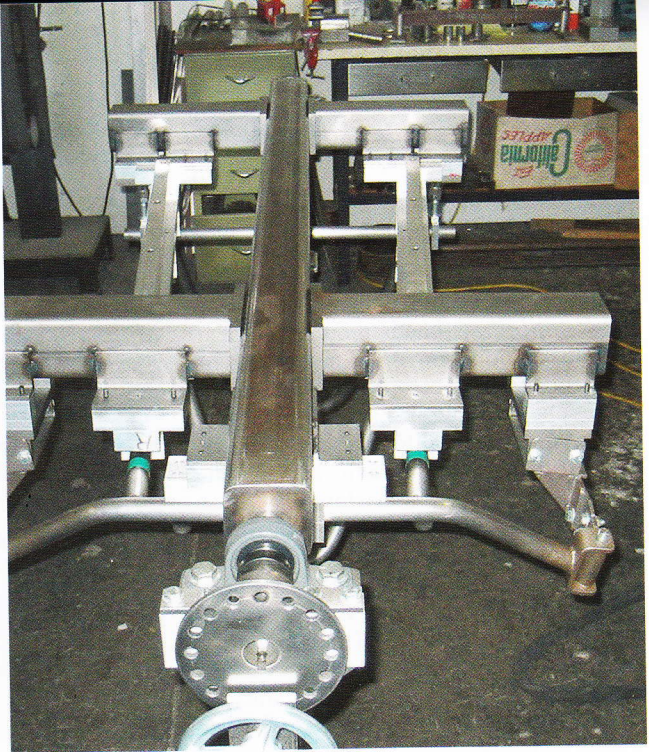
Instrument Graphics of Newark California screen printed the Go Kart graphics on to the seat back upholstery covering. This was cured using ultra violet light which ensured that the ink would not run should the upholstery come in contact with fuel. Alex's Auto Upholstery of Tracy California was entrusted with making the

finished seat cushions. The cushions were provided with zips to enable the thickness of the padding to be altered to suit individual body sizes.

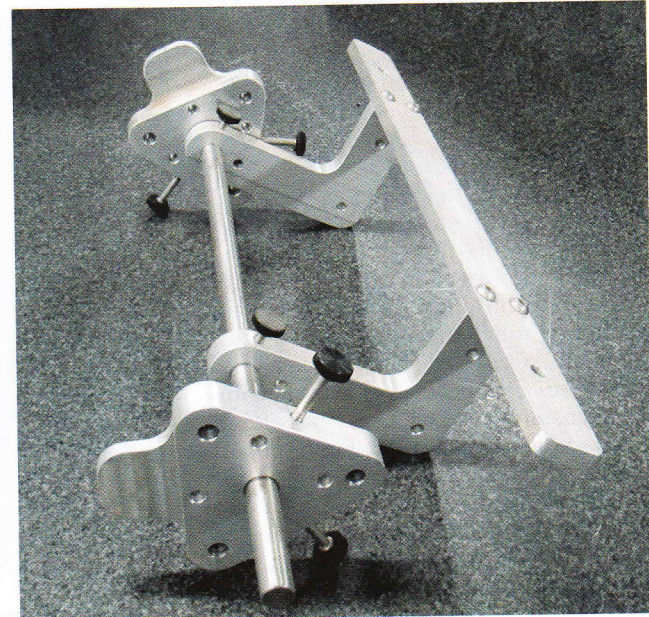
Fixtures to enable the spindles to be welded were made as well as alloy brake brackets copied from the Reed item that was an aftermarket unit in 1962. Back then the Go Kart 1200 came equipped with a 5 inch diameter Bendix drum



1



2



3

brake. At this stage it was decided to upgrade the stopping power and use the Airheart 175 hydraulic brake instead with an 8.25 inch diameter ventilated disc. These discs were laser cut from hot rolled steel 5/32 inches thick at JP Manufacturing in Santa Clara California, then annealed and Blanchard ground to a finished thickness of 0.125 inches by Pacific Disk Grinding in Hollister California. Thankfully the Airheart caliper and master cylinder units were still available to buy but now made by a company called Tolomatic located in Minnesota.

Other items such as the original foot pedals, steering wheel and steering column could still be purchased off the shelf at Azusa Engineering in California not too far from where the Go Kart was made all those years ago. Unfortunately the seat back fuel tanks that were so popular back in the day were difficult to source despite the fact that the tooling was still in the store at Azusa Engineering. Scott along with Bubba (Glenn Davis) decided to remanufacture a batch of fuel tanks to make the Go Kart 1200's look exactly like they did back in the day.

The aluminum fuel tanks were spun by a company located near Palo Alto; unfortunately they went out of business soon after completing the Go Kart job. They were a very old shop at the time, probably one of the last metal spinners in the Palo Alto area. Another of Bubba's contribution to the project was to get the fuel tanks made. He made the caps and filler necks in the shop at ASW R & D Machining along with the fuel tank backs. The tanks were welded by an outsider who

did the work in his spare time. The spun parts along with the welding were the only operations undertaken outside of Scott's shop to re-produce the gas tanks.

The next problem that needed addressing was the wheels. Azusa Tristar wheels were still available but they were not period correct. A top of the range kart needed something up market in the wheel department. In 1962 the wheels to have on your kart were the Go Power units.

Since the Go-Power factory used to be located only 10 miles away from Scott's premises he decided to pay a visit to the original address at 1800 Embarcadero Road, Palo Alto, California. Scott discovered that the building had been turned into industrial condos, with a number of businesses in the building. He knocked on a few doors, inquiring about the Go-Power company, but no one knew what he was talking about. Finally, Scott stepped into the last unit in the building and fortunately happened to meet a chap called Dave, who turned out to be the mechanic for Terry Buffum who had been one of the owners of Go-Power. Dave provided Scott with contact information for Terry Buffum, who at the time was working at

NASA/Ames Research Center in Mountain View, California where Scott had served as a machinist intern years earlier. Contact was made with Terry by phone and he was very gracious and glad to know that Scott was trying to preserve a part of karting history. Terry explained that many years earlier, the tooling for the wheels had been sold twice. Through other contacts and leads provided by Ter-

1. Welded frames ready for belly pan and seat fitting.
2. Turn over welding jig which can be altered to accommodate a variety of rear type historic kart frames. Photo shows jig upside down to allow welding of the underside of the front axle in situ.
3. Location fixture to enable welding of rear axle bearing hangers to chassis rails in the correct position.



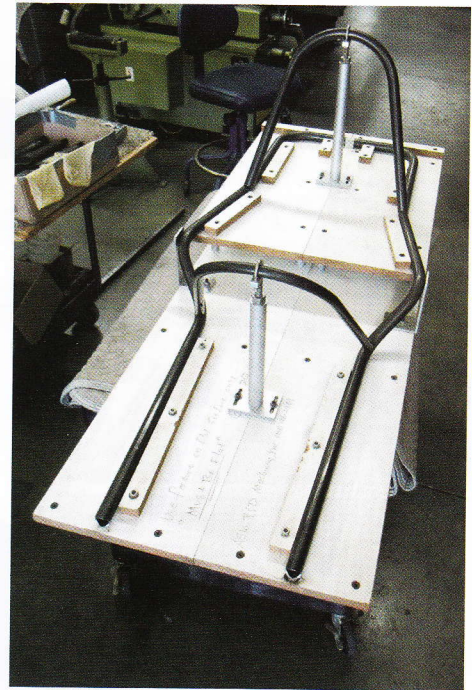
4



5



7



6

- 4. Re-manufactured Go Power wheels.
- 5. Go Kart logo by the late Tom Medley.
- 6. Jig for checking that the tubing has been bent within tolerance.
- 7. A plumber's nightmare, the majority of the frame members needed to construct ten Go Kart 1200 frames.

ry, the current owners of the tooling were located, along with the original company that built the pressure die-cast tooling. From start to finish it took about nine months to get the aluminum wheels cast.

Once Scott located the owner of the tooling he had to negotiate with them and the foundry to have the wheels pressure die cast. Additional work was also needed; Scott's company ASW R & D Machining Inc. had to machine the 1 inch and 3/4

inch diameter bushings that were cast into the rear wheels.

From inception to ten replica karts being ready for the track occurred over a period of 14 months working on off on. Not only was the kart reproduced it was improved. The braking system was upgraded from drum to hydraulic disc. As well the method that Go Kart adopted of just drilling the front bumper tubing to take the foot pedal pivots was addressed by providing

welded in bushes, a weakness pointed out by the late Alan Burgess in his track test report on the 1200 published in the October 1962 edition of his magazine. The use of alloy sheet in the seating area and on the engine mount made the finished kart lighter than the 1962 model, the weight of the original kart being another criticism by Burgess in his report.