

# History of Northwest River Supplies

By Herm Hoops ~ 2018

Since Northwest River Supplies (NRS) began marketing river gear and manufacturing inflatable river boats they have become a significant player in the design, development and distribution of a wide variety of outdoor recreation products. Today boats are an important part of Northwest River Supplies (NRS) and a colorful part of NRS history, but it's like seeing only the trunk of the elephant.(15) (#w.)

In a sense Northwest River Supplies began as an offshoot of Bill Parks working in the Cadillac division of General Motors. After receiving a PhD in business from Michigan State University, Bill was teaching business at the University of Oregon, but he became aware that he was teaching things he had never done.(6) (#a.) While that may not bother most teachers, it bothered Parks and he started looking around for a way to start a business. He had been a ski instructor for some time and had also become an avid River runner. It was clear to Parks that the ski industry was well marketed and didn't offer much business opportunity for a novice.(6)

On the other hand, rafting was so much fun and there were potential markets because it was difficult to get equipment. It was likely that more people would take up the sport and they would need equipment. With \$2000 in a Moscow, Idaho bank account Parks left the University of Oregon to take a job at the University of Idaho and he rented a post office box as the address for Northwest River supplies. Bill chose the name Northwest River Supply because it seemed to have a certain ring to it and when he moved from Oregon to Idaho he didn't have to change the name.(6)

In 1972 Parks began selling raft and kayak products out of his garage and basement to friends. Although NRS began in 1972 Bill's first remembrance of selling a raft was a young man from Clarkston, Washington in the Spring of 1973 who said that he would buy a raft if Parks would teach him to raft. Though it was a low-water year the two of them went down the lower Salmon in May of 1973. Parks remembers: "There were no rapids, just a few pressure waves until we reached slide rapid, and that was when I packed all our bags under the frame and told him to get as low as he could in the bow. We made it through and I sold my first raft.(7)

Though he had begun by selling to friends in order to learn what products would be successful and how to sell them, his plan was to sell throughout the United States. Therefore NRS needed a catalog and a way to get that catalog to potential customers: "I started typing the catalog myself but soon we expanded to an actual printed catalog with pictures. The catalog initially had few items and was not in color. However, by 1977 we had a full-size catalog and the cover was in color. Rafting was expanding rapidly throughout the country and NRS was ahead of its time."(6)

Parks thought that no one could compete with his new business because he knew sources that it had taken years to find. However, Dan Baxter, the owner of Andy & Bax, an Army Navy surplus store in Portland Oregon knew much more about sourcing products than Parks did. Baxter became a wholesale distributor of raft products called B & A distributing.(6) (#b.)

{Numbers in parenthesis (1) are REFERENCES; letters in parenthesis (#a) are described in SIGNIFICANT NOTES.}

Baxter saw an advantage in having other catalogs that purchased their products from B & A Distributing and so he helped Cascade Outfitters start up.(6)(#c.) Just as Cascade Outfitters was getting started NRS was approaching \$1 million in sales. It was a fortunate head start because the market was soon overwhelmed with mail order catalogs.(#l.) Although the mail order operations were tough competition, the biggest threat came from raft and kayak stores.(6)

Bill Parks remembered: “When NRS was first getting started I started to think of myself as really pretty smart and good at creating and running a business because no matter what I did sales increased very rapidly and as I said by 1980 NRS reached one million dollars in sales. But then the music stopped and NRS was unable to grow at all for the next four years, culminating in an actual reduction in sales and a slight loss in 1984. At that time I realized that this was not just a game but very serious business and I had to work very hard to win and continue to grow.”(6)

In 1974 a number of people died in the record breaking river floods and Parks thought some of them could have been prevented had there been an easier way to retrieve equipment than by untying knots and ropes. Parks looked for an alternative to ropes and knots, and in a catalog of a company that made cargo handling equipment he found straps with an excellent buckle that could be opened even under difficult conditions. He sent for samples and was immediately convinced that the straps could be used for rafting. Since then NRS has sold thousands and thousands of straps and has improved the buckle and webbing as well.(6,20)(#d.)

NRS began its inflatable line by purchasing rafts manufactured in Taiwan that were relatively inexpensive. Many companies sold these rafts, but Bill worked with the manufacturer on designs that were more appropriate for river running.(6)(#x.) These boats started with the Sprite that was 11 feet long and 5 feet wide with 16-inch tubes. It had a raised bow, D-rings and six air chambers. In a year or so NRS created the Scout that was 14 feet long, 7 feet wide and had 20-inch tubes. In a couple of years Parks took the basic old six-man yellow ducky and modified it by increasing the diameter of the stern, adding cross tubes and most importantly changing the air chambers to front and rear rather than side to side. It was an immediate hit and by the mid-1980s NRS was selling 500 to 600 of what we had christened the Otter.(7) These early raft models used the military style valves.(8) When NRS began building boats they used a cold (hand) rolled construction.(25)(#aa.) By that time NRS was selling about 1100 boats of its own design per year.(7)

In 1978 NRS negotiated an agreement with Achilles (#f.) to develop what became the NRS Sport, a high-quality personal raft for a variety of uses including long trips with several passengers and gear. It had military style valves and outstanding Achilles fabric. The 14.5' NRS Sport was an immediate success and sold over 100 each year. The Sport was such an excellent raft that even though manufactured in the late 1970s and early 1980s many of them are still in the water today.(6,7)

In 1977 in addition to UDISCO, Avon and Maravia NRS started selling boats of their own design. During the late 1970s and gathering steam in the 1980s many local raft and kayak shops opened. Achilles, seeing the success of the Sport, began designing and building 14' and 15'6' rafts. What had separated NRS from the other rafts was a larger tube size, but when larger tubes became the norm NRS was having difficulty selling through a catalog against stores that could show the merchandise on their floor.(7)

1980 NRS Models used Metzler fabric made of nylon coated with neoprene/Hypalon or EPDM with d-rings, rub strake, repair kit and inflatable thwarts as standard equipment.(2) The 1980 rafts had a 6 month to 1 year warranty(W\*).

<u>Model</u>	<u>Length</u>	<u>Width</u>	<u>Tube</u>	<u>WT.</u>	<u>Floor/Tube Fabric*</u>	<u>Price</u>	<u>(W*)</u>
Sprite	11'2"	5'2"	16"	55#	1500E/	\$495	
Sport	14'9"	6'8"	20"	100#	1260/840E	\$1475	1 year
Scout	14'	7'	20"	132#	1100H/	\$645	1 year
Otter@	11'2"	5'6"	24"	55#	840/420/E	\$255.	6 mos.

SB = Self Bailing Model

H = Hypalon; P = PVC; E = EPDM

@ = diminishing bow from 16.5" to 24"

As War surplus dry bags became more and more difficult to obtain Campways and others began making rubber or Hypalon dry bags, but the bags were relatively expensive. Phil French, a friend of Parks had glued a bag out of PVC(#g.) material and that impressed Bill. He learned that the PVC material was much less expensive and it could be welded in a fraction of the time needed to glue a dry bag together.(#g.) Parks soon developed a good river bag out of PVC material.(#g.) When they had a serviceable design, Phil volunteered that he had 3,000 yards of orange tarp material left over from a previous contract. By 1977 the Bill's Bag was ready for market and they started selling in large quantities. Within a year there were many copies of the bag on the market, and they were all orange! When asked, these competitors had many reasons why they had chosen orange for their bags: it was highly visible, you could see your gear inside it. It turned out that they too had ferreted out Phil French and obtained the inexpensive orange material!(6,16)(#h.)

Alan Hamilton met Bill Parks while working at the bank and rafting with the group and Parks occasionally joined the weekend outings. In the summer of 1982, Bill invited Hamilton on a preseason Middle Fork of the Salmon River trip. Approximately, 15 months later in the fall of 1983, Bill Parks asked me to be the general manger of NRS. During his time at NRS Hamilton met his future partners in AIRE.(16, 22)(#q.)

By 1983 there were a number of rafting or paddling shops in the U.S. and NRS was feeling the pinch. As competition increased it became obvious that for NRS to continue it would have to begin selling more products to the newly river equipment retail stores. However, that was easier said than done because NRS was primarily a retail catalog store and it was also was a captive of its small size and lack of its own factory. In the Fall of 1983 Parks attended an Achilles dealer meeting in Seattle and Dana Bottcher, owner of the Swiftwater shop in Seattle, happened to sit next to him. Bottcher told Bill that a customer had come into his shop with the NRS catalog open to the page with an Achilles 16-foot boat in it and saying "that's it that's the one I want."(6) About 1983 Parks had some discussions with Toyo Rubber in Japan and at the National Sporting Goods Association Trade Show in Chicago regarding boat manufacturing. B.A. Hanten of Oregon had switched from B.F. Goodrich to Toyo to manufacture his Rogue rafts. B.A.'s partner, Jerry Briggs also sold oarlocks and NRS bought them from Briggs.(24)

Dana complained that the NRS catalog price was \$1,500 and his price was \$1,575, and he couldn't compete with the lower price.(6) That comment indicated to Parks that NRS needed its own products to sell to the stores. It became at least a ten-year project to create many products that retail outlets would buy from NRS. As long as NRS could provide retailers with enough margin for both to make a profit both would be happy and the retail price and the NRS catalog prices were the same.

NRS already had a few products such as dry bags and straps but it needed many more and they needed to be manufactured at a cost that would allow sales to dealers, and provide a suitable margin for the dealers and NRS. In 1984 NRS had its first down year and actually lost money and at that point Parks and his staff got really serious about making NRS a success.(6,7)

The mid-1980s saw the advancement of inflatable kayaks (IK) and increased use by private river runners. Prior to that time IKs were primarily in the domain of commercial outfitters. In 1983 Bill Parks tested the NRS entry into the IK field, called Rascal, in the Grand Canyon. In 1984 NRS began marketing the Rascal and another model named the Scamp. The Rascal had 10 inches of rocker on the bow and stern, and a deep V-hull for tracking. NRS' Willy Accola indicated the Rascal was economical, designed for packing and will fit in a dry bag. Both models were made from Metzler fabric with an I-beam floor and tapered hull. The Scamp had a more traditional floor and came in one and two-person models.(3)

<u>Model (1984)</u>	<u>Length</u>	<u>Beam</u>	<u>Tube</u>	<u>Wt.</u>	<u>Floor/Tube Fabric*</u>	<u>Price</u>
Rascal	8'	38.4"	11"	22#	840/43/840/17	\$585
Scamp 1	9'	36"	11"	40#	1100/42/840/37	\$875

\* *denier/ounces per square yard*

In 1984 NRS also marketed boats manufactured by Achilles, Avon, Campways, and UDISCO. Kris Walker, owner and designer of the Argonaut Cataracts, visited NRS in the fall of 1984. Bill Parks, Alan Hamilton and Kris went to a pond and rowed his Argonaut cat. The original Argonaut was made of PVC with no Airecells. NRS imported a neoprene version of the Argonaut, called the Cougar, and paid a royalty to Walker.(16)

In 1985 NRS tested self-bailing rafts on the Salmon River and in 1986 NRS introduced the initial version of the Sprite II and Scout II self-bailing model made of 1100 denier EDPM material. The dimensions of the Spirit and Scout remained the same as in previous years. The I-beam self-bailing floor was constructed with 1260 and 420 denier EPDM(#g.) neoprene fabric that was 1.5 mm in thickness. The floor was protected with a pressure relief valve and fastened to the tubes with laced-in brass grommets. The boats had 4 main tube air chambers, 16 stainless steel 2' D-rings, removable thwarts, military style valves, wear patches, and a two-step bow and stern rise.(13) The Otter was designed with a parabolic bow that increased from 16 1/2" to 24" in diameter and an enlarged rear chamber.(9,13)

<u>Model (1986)</u>	<u>Length</u>	<u>Beam</u>	<u>Tube dia.</u>	<u>Wt.</u>	<u>Fabric*</u>	<u>Floor</u>	<u>Price</u>
Sport II	14'9"	6'10"	20.5"	140#	840/43H	1260/58	\$1345.
Sport IIWF	14'9"	6'10"	20.5"	165#	840/43H	1260/58	\$1675.
Otter	11'2"	5'6"	16.5"	52#	420/26E	840/30	\$ 255.
Otter WF	11'2"	5'6"	16.5"	62#	420/26E	1200/37	\$ 345.
Otter SB	11'2"	5'6"	16.5"	85#	420/26E	1200/37	\$ 465.
Sprite IIWF	12'6"	6'	18"	95#	840/30E	1200/37	\$ 595.
Sprite IISB	12'6"	6'	18"	115#	840/30E	1200/37	\$ 785.
Scout IIWF	13'10"	6'10"	20"	125#	840/30E	1200/37	\$ 745
Scout SB	13'10"	6'10"	20"	145#	840/30E	1200/37	\$ 985

WF = *Wrapped Floor*; SB = *Self bailing*

H = *Hypalon*; P = *PVC*; E = *EPDM*

\* *denier/ounces per square yard*

In 1986 NRS also marketed boats manufactured by Achilles, Avon, Riken, SOTAR, and Sevylor.

By 1990 NRS was purchasing rafts of its own design from a factory in Mexico. Initially Parks drew out patterns by hand, but by 1990 the NRS IT associates have produced the raw material that NRS uses to draw out two dimensional patterns.(8,25) The Mexico plant started using Metzler fabric (#o.) and Halkey Roberts valves.(#n.) Some of the material that we were using did not meet NRS quality standards and so even though it was more expensive NRS switched to material from Pennel & Flipo, (#p.) a French company that built material for many of the top manufacturers in the field. Pennel's Orca material has proven outstanding and NRS also upgraded its valves to Leafield, which had been used for many years by Avon.(7)(#m.)

In 1990 NRS began carrying AIRE inflatable cataracts, manufactured in Meridian, Idaho, in their catalog. That year NRS introduced a new line of boats made of Pennel & Flipo 80% Hypalon fabric.(4)(#r.)

<u>Model</u>	<u>Length</u>	<u>Beam</u>	<u>Tube</u>	<u>WT.</u>	<u>Type</u>	<u>Fabric</u>	<u>Price</u>
NRS126	12'6"	5'	18"	95#	ST		
NRS130	13'	6'3"	19"	135#	SB		
NRS140	14'	6'3"	19"	115#	ST		
NRS140SB	14'	6'10"	20"	145#	SB		
NRS156	15'6"	7'3"	21"	180#	SB		

{ST = *Standard Floor*; SB = *Self Bailing*}

In the early 1990s NRS had a series of managers at the Tecate plant that had to be replaced.(6)(#j.) While Parks was very impressed with the workers there, the quality of the products was not great. Soon the factory went bankrupt and Parks was offered the chance to hire the laid off workers and start his own factory. It seemed that some of the workers were excellent but the managers were often problematic. Parks decided to see if the factory could be reconstituted using some of the workers.(7) The challenge was great and NRS made a few missteps along the way. With a lot of hard work and some luck the NRS factory eventually became one of the best manufacturers of Hypalon rafts in the world.(6)

Choosing a new manager in Mexico was not easy to do and the NRS representative sent to look at the situation chose a manager to open the new factory. Unfortunately, that manager was likely the one who had embezzled money from the former factory and caused it to go bankrupt! The new factory manager absconded with the funds that were sent down to start the factory. This set NRS back but they persevered and Parks spent every spare moment in the factory both building patterns and trying to improve the quality of the boats. Once a worker came to Parks and said that a raft wasn't holding air. Bill outlined the steps to take to correct the problem and indicated that if that didn't work they should take the boat apart and redo it. An hour later the worker returned and told Bill that the foreman had told him to put the raft in a box and ship it! Parks knew then that the problems at the plant were much more severe than he had thought. It took some time to replace the foreman and bring quality up to expectations. For several years NRS employees in Moscow inspected every raft that had been built by the Tecate factory. After several years the quality was so high that the Moscow employees ceased inspecting the rafts because they no longer found any flaws.(7)

Eventually NRS hired an accounting expert to manage the Tecate plant. Because he was in charge of the accounting he was able to show that the NRS factory in accounting was losing money.(6)(#j.) Eventually First Security bank foreclosed on its loan and put NRS in its "special loans" division where the interest rate was much higher and NRS was under threat. Yet during this time NRS continued to be profitable.(6,7)

Parks was becoming increasingly dissatisfied with the Tecate manager's performance and also noticed that something quite puzzling was going on in the company. Because of the rise in loan rates NRS had been searching without success for another bank. Parks finally took over the search and contacted the Bank of Idaho where he kept a personal account. The bank was interested in funding NRS but was puzzled by why NRS that admittedly was having difficulties with its Mexican operation, was still overall profitable and NRS should not have been put in such a position by First Security Bank. To clarify the issue Parks told the loan officers that the Tecate manager would provide any information they would need.(6)

Because the factory was not producing up to the efficiency and quality standards Parks expected he was going to the factory in Mexico at least once a month while still teaching full time at the University of Idaho. In 1992 he spent the entire Thanksgiving vacation in Mexico working on patterns and working on how to improve the quality. The full-time job at the University and trying to fix the factory in Mexico was exhausting.(6)

In October 1993 Parks went to an industrial fabric show in Denver. The loan officer from his bank called Parks because the Tecate manager had indicated he was getting some investors together to purchase NRS and he hoped that wouldn't keep the bank from loaning NRS the money it needed. It is unlikely a bank would loan money to a company that was planning to change hands. Parks immediately set up a meeting with the Tecate manager and gave him two choices: he could resign and take the time to train a replacement or Parks would immediately terminate him for cause.(6)

That evening the Tecate manager met with the employees and the next day none of them showed up for work. In 24 hours NRS went from 17 employees to three. When Parks came to NRS Wednesday morning the remaining employees were standing outside because none of them had a key. Bill let them in and they went to work. By Friday six more workers returned to work. Because it was October NRS was able to answer every phone and ship every order.(6)

In 1992 the NRS 14' Scout self-bailing boat had 35 ounce/550 denier polyester tubes made with Metzeler coating and a 42 ounce/840 denier I-beam floor and a floor wrap made of nylon and neoprene fabric. All of the Scout's seams were cut on the bias.(#s.) The Scout's floor was set about half-way up the tubes to reduce floor drag when rowing. The thwarts are sewn in, but could be deflated to rest on the floor if a dry box or cooler was inserted into the frame.(5)

NRS is fortunate because a number of exceptional people came to work there and have continued at NRS and in the paddle sports industry. Bryan Dingel had a wide experience while working at Robert Comstock, a designer and maker of high-end women's leather fashions. Bryan applied for a purchasing position at NRS.(#k.) Bryan soon took over many of the jobs that Bill Parks had done, such as overseeing the Mexican factory and purchasing goods from Taiwan and many other countries. Because Dingel had worked in the fashion industry and with the help of others at NRS he was able to lead in the addition of many new products to the NRS line. Although NRS has great credibility in its production of hard goods including rafts, frames and other products they really needed to round out the line by selling clothing and other items that have multiple uses as well as being strictly for rafting or kayaking.(6)

One of NRS biggest innovations was the aluminum frame with LoPro frame fittings and oarlocks. Up until the 1990s frames were either welded pipes or speed rail fittings (building scaffolding and connectors). The welded frames were heavy, unwieldy and could not be broken down. Speed rail frames were held together with set screws, and although they could be adjusted or broken down, eventually the set screws wallowed out and made the fitting loose.(11) In 1990 George Mancini an NRS employee developed LoPro fittings and oarlocks that were held to aluminum rails with u-bolts. The frames were relatively light, sturdy, adjustable and could be broken down easily. The first 3-piece oar mounts were made of a cast head, piece of pipe, and a LoPro and were used in 1990 at the same time as the original LoPro.(10)(#t.,#q.)

Both NRS main buildings in Moscow are each approximately 45,000 square feet. In addition, NRS rents space for its Moscow frame shop and an internet technology space.(6)

From the episodes in Tecate, Bill Parks learned a lot about hiring and from then on NRS would hire an employee for short time in a part-time job. At the end of the term that employee was well known and would be promoted to a better job, or perhaps a full-time job if they showed competence and dedication to NRS. When NRS hired warehouse pickers they often found exceptional people that could be used in sales and marketing or if they chose a more physical job perhaps to work in the frame shop. NRS almost always hire internally.(6)

In 2000 Dan Baxter from B&A distributing decided to retire and because NRS shared the distribution of many products they purchased Baxter's entire inventory.(#b.) NRS worked with Japan's Riken to keep their products available in the US. Initially NRS built some of the Riken rafts with their material, but we had great difficulty in making the patterns work because they were in Japanese. Parks subsequently re-patterned all of the rafts and since then they have been part of the NRS offerings.(7,14)(#b.)

Though NRS was building some of the world's highest quality rafts, around 2009 it saw a market for lower priced rafts and determined to bring in PVC rafts from various Asian factories.(7) NRS has dozens of joint venture and contract manufacturing relationships. One of these is a Korean based firm which is the parent company owning the Zebec label.(#u.) The Outlaw Series of boats is made mostly in China and Korea, with some aspects in Taiwan.(17)(#v.)

The 2014 Otter Series has 41 oz., 1100 denier tubes and floor, 35 oz.1100 denier frame wear pads, HD40 gum chafer bottom pads, 6 air chambers (includes 2 thwarts and floor chambers), 2 removable battens, 12 stainless steel 2" D-rings, 4 handles, Leaffield C7 valves, I-beam self-bailing floor and a 5- year warranty.(12)

<u>Model (2014)</u>	<u>Length</u>	<u>Beam</u>	<u>Tube dia.</u>	<u>Kick</u>	<u>Price</u>
Otter 120	12'	5'6"	17"	26"	\$3,195
Otter 130	13'	6'2"	18"	28"	\$3,495
Otter 142	14'	6'6"	20"	30.5"	\$3,895
Otter 140	14'	7'	20"	29"	\$3,995
Otter 150	15'	7'	20"	29"	\$4,350
Otter 96 NSB	9'6"	4'11"	16.5"	24"	\$1,795
Otter 106NSB	10'6"	4'11"	16.5"	24"	\$1,995
Otter 120NSB	12'	5'6"	17"	26"	\$2,350
Otter 130NSB	13'	6'2"	18"	28"	\$2,650
Otter 140NSB	14'	7'	20"	29"	\$2,875

NSB = Non self-bailing floor

The Outlaw Series has 48 oz. PVC coated tubes, 68 oz. 4000 denier floor, 6" drop-stitch floor, 6 air chambers (includes 2 thwarts and floor chambers), 2 removable battens, 12 stainless steel 2" D-rings, 4 handles, Leaffield C7 valves, and a 3-year warranty.(12)

<u>Model (2014)</u>	<u>Length</u>	<u>Beam</u>	<u>Tube dia.</u>	<u>Kick</u>	<u>Price</u>
Outlaw 120	12'	5'6"	17"	26"	\$1,795
Outlaw 130	13'	6'2"	18"	28"	\$1,895
Outlaw 140	14'	7'	20"	29"	\$1,995

The Patriot Series is constructed with U.S. manufactured XR-Mariner fabric coated with 38 oz. 1000 denier Dupont Elcaloy (a synthetic polymer designed for wear and flexibility), extra bottom chafe material, top frame wear material, 6 air chambers (includes 2 thwarts and floor chambers), 2 removable thwarts, 12 stainless steel D-rings, 4 handles, Leaffield valves, self-bailing floor and a 5-year warranty.(12)

<u>Model (2014)</u>	<u>Length</u>	<u>Beam</u>	<u>Tube dia.</u>	<u>Kick</u>	<u>Price</u>
Patriot 130	13'	4'11"	16.5"	24"	\$3,140
Patriot 142	14'	5'6"	17"	26"	\$3,450
Patriot 140	14'	6'2"	18"	28"	\$3,595

The Expedition Series has 48 oz. 1670 denier Pennel Orca tubes and floor, 41 oz. 1670 denier frame wear patch, HD-40 gum chafer bottom protection, 7-9 air chambers (includes 2 thwarts and floor chambers), removable thwarts, stainless steel D-rings, 6-8 handles, Leaffield valves, self-bailing floor and a 10-year warranty.(12)

<u>Model (2014)</u>	<u>Length</u>	<u>Beam</u>	<u>Tube dia.</u>	<u>Kick</u>	<u>Price</u>
E120	12'	5'6"	17"	26"	\$4,200
E130	13'	6'2"	18"	28"	\$4,550
E136	13'6"	6'5"	19.5"	30"	\$4,750
E132D	13'2"	6'6"	19.25"	24"	\$4,800
E139	13'9"	6'3"	20"	28"	\$5,045
E142	14'	6'6"	20"	30.5"	\$4,995
E140	14'	7'	20"	29"	\$4,995
E151	15'2"	6'10"	24.75"	30.5"	\$5,795
E150	15'	7'	20"	29"	\$5,450
E152	15'2"	7'	20"	29"	\$5,550
E161	16'	7'2"	20"	30.5"	\$5,800
E160	16'	7'7"	22"	32"	\$5,950
E162D	16'	7'2"	21.5"	33"	\$6,250
E176D	17'10"	7.7"	22.5"	31"	\$6,550
E180	18'	8'4"	24"	34.5"	\$6,950
E185	18'	8'	24"	38"	\$7,150

*D = Diminishing bow and stern tubes*

One of the continuing problems for NRS is the copying of patented or proprietary items that are copied by mostly Asian manufacturers. This has been an ongoing issue for most manufacturers since the production of Udisco boats in Taiwan. Companies like NRS expend significant funds to design, produce templates and dies and manufacture a product. When that product is copied without receiving just compensation it allows those companies to unfairly compete.(#y.#ab.)

Now NRS has the basic structure for success because excellent customer service requires constant improvement of all products and development of new products when there is a need or demand. Often customers do not realize that improvements are necessary until NRS brings out an improved product.(6)

In order to be a success NRS had to be the company that Bill Parks would want to work for. Because NRS was only marginally profitable, initially the employee pay was marginal at best. While the profitability was not great, NRS continued to grow and between 1984 and 1993 sales increased from slightly over \$1 million to slightly over \$4 million.(6) As profits increased so did employee pay and benefits. Today Northwest River Supply is an employee-owned company.

In 1993 the company changed management and structure, pivoted in its Marketing and ProDev, and was set on the course for what it is today with revenue growing over ten times from the early 1990s and with approximately 150 employees worldwide. Boats are an important and colorful part of NRS, but it's like seeing only the trunk of the elephant. To many, boats are what NRS is known for... but it's only a part of the whole. Outfitters worldwide use NRS boats daily and NRS is known for commercial equipment. Buyers at REI and L.L. Bean and thousands of other retail stores know NRS for SUP boards and PFDs and helmets and rash guards and clothing and shoes and gloves... while military and rescue organizations know NRS for swift water safety gear. And the list goes on. The platform Bill built before the early 90's grew into the modern company it is today, culminating in the sale of the company to the employees, now 100% employee owned.(15)

Now NRS is the manufacturer of a full range of river-related and outdoor equipment marketed world-wide. From the beginning Bill Parks had wanted to make NRS the kind of company that he would want to buy from. That meant treating the customer with respect and giving outstanding customer service. NRS had to become the company that people would like to buy from. What most companies didn't realize at the time was that an extremely high percentage of customers are sincere in their beliefs that they deserve whatever they are asking for. Therefore, it is important to go out of one's way and beyond what may make financial sense to satisfy the customer. That mantra that the customer is always right and deserves the best service is easy to say but extremely difficult to train, but NRS has worked on its customer service since that time.(6)

As Bill Parks neared his 80th birthday, he knew he needed to consider the legacy he wanted to leave behind. He could have sold NRS to the highest bidder, taken his money and floated off into the sunset, but that wasn't his style. Instead, Bill helped finance a deal to sell the company to his employees. In 2014, NRS became 100% employee owned.(23)(#z.)

Now is the greatest test of Bill Parks education and passion. NRS has followed a very successful path using his template, and now the new owners have to achieve the next progression and on into the future.

## **REFERENCES**

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## **MISCELLANEOUS**

- Hull Code: WSI (stands for Water Sports International)
- NRS: 2009 South Main Street, Moscow, ID 83843 (current);
- NRS: 214 N. Main Street, Moscow, ID 83843 (1980);
- NRS: original address - PO Box 3195, University Station; 540 North Grant in Moscow, Idaho;
- Bill Parks lived at 1848 Moss Street, Eugene, Oregon;
- Manufacturing Plant: Tecate, Mexico; approximately 28,000 square feet;
- Frame Shop: 2216 S. Main, Building C, suite; 4,800 square feet with an additional 2,400 square feet split between material storage and company use;
- NRS Representatives don't sell to the public, they are sales people employed by NRS. Dealers sell to the public;
- Charlie Walbridge, was a representative on commission Maine to Georgia (1)(#e.); Walbridge is also the founder and President of Wildwater Designs, Ltd.
- Brian Cook served a similar role as Walbridge in Canada;

## **SIGNIFICANT NOTES:**

### **(#a.) Bill Parks:**

Parks worked for the Cadillac Division of General Motors. He received his PhD from Michigan State University. During his University career Bills heart was in marketing, but he taught financing. Before starting NRS some of the business opportunities he explored were raising crayfish for the Swedish market, raising mushrooms, selling beer making supplies and even selling bread knives.

### **(#b.) Dan Baxter and B&A Distributing:**

Dan Baxter's father got into the army surplus business in 1947 and was a major buyer of small rafts, selling them wholesale. Around 1956 the company began selling the rafts in retail. As the sale of surplus inflatables ended in the early 1960s it became difficult to procure the boats that Baxter was then selling to river outfitters. When Dan became part of Andy & Bax Army/Navy Store they were a big customer of Campways a company that made tents and camping and hiking equipment made in Taiwan. In the late 1960s Vladimir Kovalik, stopped into the store and told Dan that he needed someone to build this Havasu raft correctly. Campways sent Baxter and Harold Horne to Taiwan to work with design engineers and Baxter ordered 200 Havasu's. By 2001 Baxter had burned out. He wanted to sell his business, including the Riken Raft lines, and retire. Baxter called Bill Parks of Northwest River Supply (NRS) and made Bill an offer to reduce his inventory below \$200,000 and provide NRS with his exclusives, customers, terms of sales and products that Baxter owned or developed. Baxter's offer included his cost for everything: freight scales, cartons, and everything in his warehouse. Bill Parks accepted the order. Dan Baxter remembers Bill saying: "I'd be crazy not to take you up on that, I got rid of a competitor and picked up merchandise that I'm (already) selling." So in 2002 Northwest River Supply purchased the company and its designs.(14) For more information see The Campways and Riken History; 2012; The University of Utah; J. Willard Marriott Library; Special Collections Department, Herm Hoops Collection.

### **(#c.) Cascade Outfitters:**

Cascade, founded in 1979 and owned by Ron Mattson, was originally a welding shop that made Cascade frames and trailers. Mattson was also a river runner who became involved with the Yangtze Expedition in China. An avid river runner, Ron's Goal was to reach out and share his passion for the sport and the knowledge of the equipment with others. Mattson eventually sold Cascade to Jack Nelson. In the late 1980s when Jack Nelson planned to sell Cascade Outfitters, Maravia decided to buy it and move it to Boise, but run it as a separate entity. For more information see *The History of Holcombe Industries & Maravia; 2015*; The University of Utah; J. Willard Marriott Library; Special Collections Department, Herm Hoops Collection.

### **(#d.) NRS Buckles & Strap;**

NRS straps are one of their most popular items. Originally NRS paid about a dollar fifteen for Anckra buckles. A couple of years later at Western River Guides Association Convention NRS discovered Anckra sold someone else buckles for \$.65 apiece allowing them to undercut the NRS price.

While attending an International Sporting Goods Association in Germany, Bill Parks found Kamet, a company that also made high quality buckles, with a spring on one side. Kamet put Parks in touch with a Spanish company at the show who made high strength webbing. They could weave anything into the webbing like the NRS letters and the webbing included ultra violet protection that was added to the fabric before the webbing was made. Parks eventually went to the Kamet factory and felt that they were better buckles than Anckra and NRS bought them. NRS bought webbing from the company in Spain and had them sewn in Seattle at Seattle Sports which is a successor to the company, owned by Phil French.

After a number of years NRS received a box from Kamet and they had not re-boxed the items - which were made in Taiwan. Eventually Bryan Dingle of NRS strengthened and improved the buckle by moving the spring to center and adding a double stainless spring.

A problem arose when Thule threatened to sue NRS because they had a buckle bumper patent and thought the NRS buckle bumper infringed theirs. They were a five-hundred-million dollar company and they were threatening litigation that could cost NRS about one-hundred thousand dollars. At that time NRS was doing \$13,000 dollars a year (in buckle-bumpers) and it just didn't pay to get into a nasty fight. Eventually NRS received a patent on their buckles and now NRS has a new buckle bumper that doesn't infringe on the Thule patent.(6,8)

**(#e.) NRS Field Representatives:**

NRS doesn't really have field representatives. Charlie Walbridge is an exception and has worked with NRS for many years. He is on a commission but NRS pays his expenses. All other sales people like Robert "Gator" Crump are sales people headquartered in Moscow, Idaho. NRS had worked with a representative at a small company in Canada for many years. When he left the company and took another job NRS reached out to him and he has been with NRS for the last couple of years. Sometimes a valued person leaves for various personal reasons and sometimes NRS can make it work for them to work offsite. NRS has in house backup for all our people with territories including foreign sales. Some are specific for one sales person but can fill in for others and other people work with more than one.(8)

**(#f.) Achilles:**

The Achilles Corporation was established in Japan in 1947. The rubberized factory division primarily manufactured rain wear. By 1961 the Achilles Corporation was manufacturing boats made from Butyl Rubber for the European Market. Achilles USA, Inc. was established as a PVC manufacturing plant in Everett, Washington in 1973. Inflatable Boats made from Neoprene were displayed at the opening ceremony introducing Achilles Inflatables to the US market. In 1977 the Achilles Corporation in Japan began producing CSM Fabric Boats in Japan. By 1981 a factory solely dedicated to the manufacturing of CSM Inflatable Boats was established in the United States. 1984 represented the pinnacle of inflatable boat sales in the U.S. and Achilles sold over 10,000 inflatable boats into the U.S. market that year.(\*)

**(#g.) PVC, CSM & EPDM:**

PVC, also commonly referred to as "vinyl," is made from two basic substances: chlorine, which comes from salt, and ethylene, a compound derived from crude oil. The chlorine and ethylene are combined to produce ethylene dichloride, which undergoes high heat and polymerization to create the powder known as "polyvinyl chloride resin." To make PVC fabric, manufacturers process PVC resin with other materials to obtain the desired color and texture, and then use the PVC to coat one side of a knit fabric, such as polyester or Lycra. The origins of PVC fabric date back to the early 1920s, when a scientist named Waldo Semon discovered a versatile new material. He called this new product "polyvinyl chloride," or "PVC." In the following decades, PVC was used in a variety of products, from piping to raincoats, with PVC-coated fabrics gaining popularity in the 1950s and 1960s.

CSM or Hypalon is a trademark for chlorosulfonated polyethylene (CSPE) synthetic rubber (CSM) noted for its resistance to chemicals, temperature extremes, and ultraviolet light. It was a product of DuPont Performance Elastomers, a subsidiary of DuPont. Along with PVC, CSM is one of the most common materials used to make inflatable boats and folding kayaks. It is also used in roofing materials and as a surface coat material on radomes owing to its radar-transparent quality. Hypalon is also used in the construction of the decking of modern snowshoes, replacing neoprene as a lighter, stronger alternative. The Hypalon trademark has become the common name for all kinds of CSM regardless of manufacturer. DuPont® Hypalon is no longer produced in the United States, but is manufactured in several other countries.

EPDM rubber (ethylene propylene diene monomer (M-class) rubber), is a type of synthetic rubber that is closely related to ethylene propylene rubber. It has excellent abrasion resistance, and excellent ozone, chemical, bacterial and ageing resistance. It can withstand temperatures from -40 Deg C to + 90 Deg C. EPDM is mainly used in the automotive industry and for roofing.

**(#h.) Bills Bags (NRS Dry Bags):**

Phil French lived in Seattle and Bill went there and slept on his couch while they worked weekends to create a good river bag out of PVC. Dennis Hill was part owner of Seattle Sports who supplied waterproof bags to NRS and many other companies. Dennis and Bob Perlatti started Seattle Sports in 1983. Before that he had worked for another company that produced similar products. Dennis sold his shares of Seattle Sports and start Newmedics in 1991.

**(#I.) Tecate Mexico Manufacturing Plant:**

The original company was started by a Spanish company and Bill Parks believes their factory might have been in Mexico City. The Spanish company had a big fire and cut their Mexican subsidiary loose. The company subsequently moved to Tecate and did some business with Dan Baxter. Baxter told Parks about the company and NRS bought some boats from it. Then it went bankrupt, and Parks thought there were some good employees. After some negotiation, he bought the business, relocated it to Tecate Baja and reorganized it.(25)

Tecate, Mexico doesn't have a great use of physical addresses. Tecate businesses commonly get mail and packages from post office boxes. The main exception are those companies located in industrial parks.(1) The Tecate, Mexico factory is about 28,000 sq. ft.(6)

**(#j.) Tecate Management:**

The distance between Moscow, Idaho and Tecate, Mexico created communication and other difficulties. Because of those limitations some of the managers in Mexico felt they were in charge of the company and the decisions that had to be made. One manager seemed to have a trouble with other mature employees. When that person left to start his own business, Parks hired a person he had known for some time. Because he was an accountant Parks turned over financial matters to him. Unfortunately, a conflict arose when that individual apparently used his position to tell the banks that while Parks was the "idea man" he was the competent person who was running NRS and as an accountant he was able to show that the NRS factory in accounting was losing money. But as any accountant can tell you whether or not a division makes or loses money can be decided by how the costs and prices are divided.(6)

**(#k.) NRS Employee Bryan Dingel:**

Because his wife was going to law school at the University of Idaho and he was commuting from Boise, Bryan was faced with a dilemma when Robert Comstock was purchased and moved to New York City. Commuting from New York City to Moscow was problematic at best and so Bryan applied for a purchasing position at NRS. He soon took over many of the jobs that Bill Parks had done, such as overseeing the Mexican factory and purchasing goods from Taiwan and many other countries. In addition, he had worked in the fashion industry and so with the help of others at NRS he was able to lead in the addition of many new products to the NRS line.(6)

**(#l) Early River Equipment Catalogs:**

Besides cascade Outfitters they included Blackadar Boating, Wyoming River Raiders,

**(#m.) Leaffield Valves:**

NRS converted to Leaffield valves in the mid-1990s and have been using versions of them ever since. Leaffield Marine is a leader in the design, development and manufacture of valves and inflation systems for a wide range of inflatable structures including Life Rafts, Inflatable Boats, Marine Evacuation Systems and River Rafts. To ensure consistent and reliable performance in critical applications, all design and production is carried out to Quality standard BS EN ISO 9001: 2008.

**(#n.) Military & Halkey-Roberts valves:**

NRS used military style valves from the late 1970s up until opening their Mexican factory at which time they changed to Halkey Roberts. NRS converted to Leaffield in the mid-1990s.

Halkey-Roberts has been providing innovative, cost efficient, quality components to the OEM market since 1941. The 690NSBVG fill and deflate boat valve that is a mechanical sealing valve. The valves came known as HR long, HR short-old and HR short-new. The valves had an external plug and without the plug inserted tended to leak.

**(#o.) Metzler fabric:**

Metzeler is best known as a manufacturer of premium tires. It was one of the first to produce the tubeless radial then the belted radial. Metzeler also produced an inflatable line, primarily inflatable kayaks, of German manufactured Hypalon (Named Trevira) and Neoprene fabrics. The company was one of the earliest pioneers in the inflatable industry and they originated many innovative designs, including round boats, sport boats and strange designs that were considered off-beat in their day. While they stressed manufacture and sales of yacht tenders and recreational speed boats they also entered the whitewater market with their Canyon, Elefant, Indo, XR Trekking, Mamut and River Star Models. By 1979 they had introduced a self-bailing, inflatable floor.

**(#p.) Pennel & Flipo fabric:**

in 1931 Jean Pennel & Joseph Flipo created a process for coating rubber onto polyester textile in Roubaix, France, and over the years the company developed several lines of high-quality new fabrics. In 1971 Olivier Lavedrine took control of the company and focused on inflatable flexible high-tech products. In the production of fabric, a company like Dupont makes a coating, another company manufacturers the fabric (like nylon, polyurethane, etc.) and a third company like Pennel and Flippo combine the coating and fabric. Since 1994, NRS has used Pennel's "Orca" material in manufacturing Expedition and Otter rafts, River Cat and Kodiak cataraft tubes, and MaverIK inflatable kayaks. Pennel originally used DuPont® Hypalon® as a coating on their Orca material. Because of the Hypalon coating, inflatables built with Orca 1740 and 1100 denier fabric – including these NRS designs – were commonly referred to as Hypalon boats. Hypalon is Dupont's name for the chemical compound chlorosulfonated polyethylene (CP), which the company invented in 1940. In April 2010, DuPont stopped making Hypalon and Pennel needed another source of high-quality CP. Extensive testing has shown that the newly sourced CP provides great at holding air qualities and is super abrasion-resistant, UV-resistant and chemical-resistant.

**(#q.) NRS Significant Employees:**

- Todd Benson, Purchasing, 20 years with NRS
- David Blue, Marketing, 15 years with NRS
- Laura Benson, In House sales, 19 years with NRS
- Tonya Dennison, Internet Technology
- Tony Mancini, Human Resources/Chief Financial Officer, 20 years with NRS
- Brent Cordatelli, Operations, 20 years with NRS

- Rob Gleason started working for NRS in the spring of 1998 while in high school and worked part time through first year of college at University of Idaho. Rob started working full time in summer of 1999 and spent many years working in both the shop and warehouse/shipping before becoming the frame shop manager in February of 2007.
- Robert "Gator" Crump, Rocky Mountain Region Sales; Crump came to NRS in 1993 while in college. Gator is from Riggins Idaho and had guided for Chuck Richards and Salmon River Experience before joining NRS.
- Alan Hamilton met Bill Parks while working at the bank in Moscow and rafting with the group. Parks occasionally joined the weekend outings and in the summer of 1982, he invited Hamilton on a pre-season Middle Fork of the Salmon River trip. It was Hamilton's first wilderness trip and he rode in Bill's raft, while the other two guys ran another boat. In October, 1983, Bill Parks asked Alan to be the general manager of NRS. During his time working at NRS Alan met his future partners in AIRE. After five years Hamilton resigned as vice president and general manager of NRS and moved to southern Idaho where he was approached by Dennis Hill, Kris Walker and Greg Ramp to consider starting a new inflatable company- AIRE.(16,22)
- George Mancini had his own shop. He was a certified aircraft welder. Mancini co-designed the original drop-in metal frames for Wilderness World with Vladimir Kovalik in 1973/74. Around 1990 George designed and built the frames for NRS that are still the industry standard. He worked for NRS for a short time later and set up their frame shop.

**(#r.) AIRE Inflatables (Argonaut Inflatable Research and Engineering):**

Greg Ramp, AIRE's chief boat designer, used to make inflatable kayaks out of his detached garage in Grants Pass, Oregon in the 1980s. Eventually he co-formed AIRE with Kris Walker, and Alan Hamilton who we knew from his days as NRS's manager. The boats are made of a non-air holding PVC-polyester coated material for outer protection. Zippered access leads to internal bladders called air cells.(\*)

**(#s.) Cut on the Bias:**

For woven textiles, grain refers to the orientation of the weft and warp threads. The three named grains are straight grain, cross grain, and bias grain. A pattern piece can be cut from fabric in any orientation, and the chosen grain or orientation will affect the way the fabric hangs and stretches. Generally a piece is said to be cut on a particular grain when the longest part of the pattern or the main seams of the finished piece are aligned with that grain. Every piece of woven fabric has two biases, perpendicular to each other. The bias grain of a piece of woven fabric is at 45 degrees to its warp and weft threads. A woven fabric is said to be "cut on the bias" when the fabric's warp and weft threads are at 45 degrees to its major seam lines. Woven fabric is more elastic as well as more fluid in the bias direction, compared to the straight and cross grains.

**(#t.) NRS Frames & Fittings:**

The first LoPro frame fittings were cast at Travis Pattern Foundry in Spokane, WA.

**(#u.) Zebec, Woosung I.B.:**

Founded in 1983 Zebec is fast becoming one of the largest whitewater inflatable boat manufacturers in the world. Woosung I.B., under its in-house brand Zebec, is a Korean manufacturer that annually exports inflatable boats worth \$20 million in 60 countries. The founder of Woosang, Mr. Lee Hee-jae, started the inflatable boat company with \$100,000 in 1992 when the Korean water sports industry was still in its early stages of development. Currently, the company is doing business with major buyers in the global markets, including Northwest River Supplies (NRS), Hobie Cat, Sea Eagle, Naish, Tohatsu, Boardworks and Star. Besides whitewater inflatables the company manufactures SUP Boards, Sports Boats, Fishing Boats, Rescue Boats, Race Boats, Waterpark Systems and Inflatable Systems. Their lifeboats and military boats are used in 13 countries including the Indonesian military.

The company established an in-house boat technology research center, the only institution of its kind, in South Korea in 2007. Zebec has developed more than 100 types of inflatable boats that are produced using glue and hot air welding construction and a production system using auto-cutting machines. Woosung has an annual production capability of 40,000 units for inflatable boats, which requires 100% hand-made process. Zebec has four manufacturing plants in China and plants in Viet Nam, Taiwan. Although Zebec has a manufacturing plant in Ohio, most of its river inflatables are manufactured in China because of lower labor and material costs.(18)

**(#v.) Off Shore Manufacturing:**

NRS produces a variety of products and has dozens of joint venture and contract manufacturing relationships. One of these is a Korean based firm which is the parent company owning the Zebec label. They often use more than one contact supplier for these items. NRS keeps its contract manufactures confidential and doesn't share production/manufacturing details unless under confidentiality statement. These are sometimes requested by larger retailers who require factory inspections. NRS operates this way the same as other labels such as Nike, Patagonia, The North Face.(17)

**(#w.) The Scope of NRS and NRS Products:**

In 1993 NRS changed management and structure, pivoted in its Marketing and ProDev, and was set on the course for what it is today with revenue growing over ten times from the early 1990s and with approximately 150 employees worldwide. Boats are an important part of NRS, and a colorful part of NRS history, but it's like seeing only the trunk of the elephant. To many, boats are what NRS is known for, but it's only a part of the whole. Outfitters worldwide use NRS boats daily and know NRS for commercial equipment. Buyers at REI and L.L. Bean and thousands of other retail stores know NRS for SUP boards, PFDs, helmets, rash guards, clothing and shoes and gloves... while military and rescue organizations know NRS for swift water safety gear. And that is only a partial list of products. The platform Bill Parks built before the early 1990s grew into the modern company it is today, culminating in the sale of the company to employees, and now 100% employee owned.(15)

NRS has the usual corporate major divisions: Marketing and Sales, IT (Internet Technology), Web Design, Logistics, Financial, R&D and Manufacturing, each with sub divisions. Department heads are Bill Parks/President, Bryan Dingel/CEO, Tony Mangini/CFO, Bret Corgatelli/CLO, Todd Benson/CPO, David Blue/CMO, Tanya Dennison/CIO, Laura Benson/Director CS.(25)

**(#x.) Formosan Rubber:**

John Hsu's father founded Formosan Rubber and he had planned to turn the company over to John. The Father had some health issues and died of a heart attack and so John's brother Henry Hsu had control of Formosan Rubber. John demanded to have his shares bought out, and with several (\$10 million?) he started a small rubber manufacturing company. NRS bought boats from them early on, as well as Formosan Rubber. The boats fell apart and Formosan Rubber, nonchalantly said: just glue them back together!(20) This was not an uncommon attitude with manufacturers from Formosa (Taiwan). The Taiwanese would be eager to negotiate a sales price down, but in the end the rubber they made might likely be from ground up tires!

**(#y.) Foreign Competition:**

For roughly two decades, the Zodiac has been the U.S. military's choice for inflatable rubber rafts. These rafts, especially the high-end model F470, are not the recreational rafts you take out to the lake on a Sunday, says Lionel Boudeau, the head of Zodiac's North America operations.

Boudeau says Zodiac supplies the bulk of the U.S. military's inflatable rafts. But that monopoly has made it more difficult for other inflatable raft companies to compete, says Elizabeth Wing, vice president of Wing Inflatables, a California-based company. "Once a contract gets locked in, after it's been awarded, it's a number of years until a contract for the same or similar item comes up again," she says. Wing says her company's inflatables should be given a chance to compete with Zodiac. When a new contract with the Army came up about three years ago, Wing tried to open up the field and discovered the Berry Amendment, a statute that restricts the Pentagon from purchasing certain supplies that are not made with American materials, such as fibers and textiles, or by American workers. It was a direct challenge to Zodiac, a French company whose boats were made of materials produced overseas.

Wing says she believes the Berry Amendment should be applied to the rubber rafts, so she continued to press the Pentagon to re-examine the amendment. She says the Army Materiel Command finally issued a ruling: If the Defense Department wants to buy them, they have to be made in America, with American materials. *(See History of Wing Inflatables\*)*

But copying of patented or proprietary products is a commonplace problem with Asian manufacturers who often ignore such international laws. Early on Campways rafts used military valves. Campways had to buy the military style valves from the US manufacturer, ship them to Okamoto in Japan. It was costly to purchase and ship them and there were delays. Campways came up with a slightly modified version of the military valve which Campways could manufacture for less and ship for less. *(See History of Campways & Riken Inflatables\*)*

Another example was at some point Mike Walker sold a used Domar raft to a company called Muto, a Korean Manufacturer. {Muto International Company Ltd. In Seoul, South Korea} Apparently Muto wanted to take the boat apart and probably manufacture it for another company. When Mike visited the Korean plant he noted a partially disassembled Domar raft that was apparently being used as a pattern. *(See History of Domar & Canyon Inflatables\*)*

NRS designed their batten attachment system in March of 1994. While the NRS management doesn't know how the NRS batten attachment system made it onto the Rocky Mountain Rafts, it's likely that this product was copied from the NRS pattern/product.(21)

#### **(#z) NRS Employee Ownership:**

Employee ownership has done more than improve the financial futures of NRS employees; it has made NRS a better company. They have learned how eager workers can become caring owners, how small ideas can lead to big improvements, how a stake in the outcome makes every decision more meaningful. Every NRS employee-owner is personally responsible for working together, and the company's performance, from customer service to dealer support to product development and quality control.

#### **(#aa.) Cold (Hand) Adhesion:**

When NRS began building boats they used a cold (hand) rolled construction. Over the years they experimented with other construction methods including sonic and hot air welding. While all methods can produce world class products if done properly, NRS uses a glue and hand rolled method for two reasons: First and foremost is their belief that the Pennel Orca fabric is the best material for commercial rafts. Its properties are superior to others in terms of UV stability, air retention, ease of repair and construction, abrasion resistance and durability. Orca is also considered a "green" fabric by the EU, without toxic plasticizers. Second, the bond of a high-quality adhesive like Clifton actually improves over time, with seams continuing to cure.

Since these products are handmade, like a great piano or pair of skis, having the workability of a slow curing cement allows the artisan to “craft” the boat panels into the perfect shape during manufacturing.(25,27)(#p.) Clifton runs periodic testing on batches with the prepared fabric. During boat fabrication NRS retains temperature and humidity controls and data.(25)

**(#ab.) Thwart Batten Attachment:**

In 1994 Bill Parks told Bryan Dingle to improve upon the thwart attachment. At that time the Avon stay was the best thwart attachment. The stay was long and flexible. Dingle took the idea, turned it sideways so it ran the along the spine of the boat, hand cut the pattern and used an ABS plastic and later STARBOARD stay instead of the flexible Avon style. Loops were made from interlocked Hypalon, and they produced the NRS BAT System(25) NRS is not sure how a system similar to the NRS BAT system made it onto RMR rafts, but they believe it was copied from the NRS pattern/product.(21, 26)

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- Bill Parks & Bryan Dingle, Northwest River Supply

**FOR INFORMATION REGARDING THIS DOCUMENT CONTACT:**

**The University of Utah; J. Willard Marriott Library; Special Collections Department;  
295 South - 1500 East; Salt Lake City, Utah 84112-0860 ([www.lib.utah.edu](http://www.lib.utah.edu))**

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