
The History of Shotcrete Equipment—Wet Mix

Part I: Aussie Innovation with S-Tube Shotcrete Pumps

By Ian Hay

In Australia, when concrete swimming pools started becoming popular with the average home owner in the late 1950s and early 1960s, the pools were typically sprayed with dry-mix shotcrete (gunite). However, we recognized that using premixed concrete with a form of shotcrete gun may have many benefits. The first attempts used a hopper with a rotating chain belt at the bottom, much like a dry-gun rotor but with 3 in. (75 mm) washers spaced at 4 in. (100 mm) with the chain in the center of the washer to form a material cavity. It ran in a 3 in. (75 mm) rubber tube and had a 600 ft³/min (17 m³/min) air compressor that blew the wet mix out of the cavity and up the delivery line. They were dusty, noisy, huge, and unreliable.

Later in the early 1960s, imported “squeezecrete” pumps were used to shotcrete pools. These were much cleaner and could have the wet-mix concrete delivered in a transit mixer. However, the distance from curbside concrete delivery through the hose to placing in the pool was a restriction, as the squeeze tubes could not withstand high pressure.

I had always lived on the Northern beaches and the Brookvale industrial area was where the concrete ready mix industry started with Pioneer Concrete, which ended up being a global company (now Hansin). So, I was hanging around the area and, being young, could just walk in to these outfits. The Fowler Wood factory made transit mixers and there were three ready mix plants close together. When I started to build the first Transcrete pump, I used the “bullet” valve system. There were dozens of small engineering and machine shops that made parts for Fowler Wood so it was easy to get parts made. Pioneer even supplied the paint and yard space to spray our first pump (they did not give a toss if it had to be “Pioneer Green & White”). All three plants provided assistance in developing pumpable concrete mixtures. Their concrete mixture design engineers were only too eager to give me the “secrets” of mixture designs.

Once we had a concrete pump, we sold 36 pumps in the first full year of production. We were approached by swimming pool sprayers wanting to ditch the squeezecrete pumps. We tried the “bullet valves” and while they worked when in perfect condition, once they had excessive wear, they were a waste of time.

In 1974, we received an order for several new pumps from a New Zealand equipment dealer. At the time, the only way

you could import a concrete pump to New Zealand (NZ) was to apply for an import license, and it was rare that one would be issued. The NZ dealer told us that he had such a license, but as it turns out, he was only hoping to get approval. Now with \$50,000 of finished pumps and a severe recession, I jumped in a plane and tried to convince the NZ Customs Department to issue a license. No such luck. However, as I was in NZ, I made several calls to local concrete pumping operations. It was obvious that Transcrete pumps, 60 to 90 yd³/h (45 to 70 m³/h) were way too big for the NZ market and what they needed was a much smaller 30 yd³/h (25 m³/h) pump, trailer-mounted and suitable for masonry block filling (“3/8 in. [10 mm] piss and pebbles.”)

The NZ pumpers were using a lot of Mayco C30HD mechanical ball valve pumps. There was no way bullet valve pumps would work, with the smaller the output and being more costly to operate due to wear.

I jumped on a plane back to Australia and on the flight back came up with the S-tube idea. We had the first unit built in 2 weeks and the first Mark 1 pump sold.

To get over the NZ license problem, the importer suggested we build in NZ and send back to Australia as well as export to Southeast Asia, as we had entered the Asian market in 1974. I ended up with a factory full of finished concrete pumps, a recession, and creditors snapping at my heels. So, I put all the finished pumps in boats to Hong Kong, Singapore, Malaysia, and the Philippines. At least I was in control of disposal at full value.

After 1 year, we were back in a strong financial position and ready to start producing S-tube trailer pumps. The NZ venture was a failure quality-wise, so we manufactured in Australia. However, the S-tube pump was too small for Australian pumpers and not suitable for Asian concrete mixtures. I had made several trips to Los Angeles, CA, in 1974 with the view of selling our bullet pumps. Unfortunately, the market in the United States was also in a recession, but I established some good contacts and passed out S-tube brochures to people using Mayco C30HD ball valve pumps. At that time, the market primarily consisted of ball valve trailer pumps or truck-mounted boom pumps. Whiteman had a small 30 yd³ (25 m³) pump but it was a sliding gate valve design and never took off.

Why the United States? Here I was sitting on a large bank balance, no local sales; the Southeast Asia market was 20% of sales and 80% of the problems. Considering the cost of transport, hotels, language, and other factors, I realized that the United States was the place to be. The Mayco ball valve pumps were having problems pumping structural pea gravel concrete mixtures due to a cement shortage. The S-tube pumps we sold in Australia were handling low-slump 0.75 in. (19 mm) pea gravel mixtures and pumped fast enough for normal home foundations.

We had also started selling S-tube pumps to the swimming pool industry with great success both in performance and reliability. I spoke to a customer who had replaced his squeeze-concrete rigs with Transcrete S-tube models and asked him how they compared with his old pumps. His reply: "The only thing I miss is the monthly invoice for replacement tubes."

At that time, we were selling the trailer-mounted S-tube pump for A\$ 20,000.00 (US\$ 16,000.00), each factory direct with no dealers.

JUMPSTARTING THE UNITED STATES MARKET

I had given out S-tube trailer pump brochures to several contacts in the United States and the details included the phone number of my in-laws living in La Mirada, CA. My office phone rang on a Saturday morning and it was my mother-in-law, saying some guy wanted to contact me, and that he wanted to buy a concrete pump. I phoned the number given and lo and behold it was Fran Wilson, who was working as

a design consultant with Allentown. Fran and I had been corresponding for years and unbeknownst to me at the time, he was designing a small S-tube pump for Mayco. Fran was using my information and selling the ideas to Mayco.

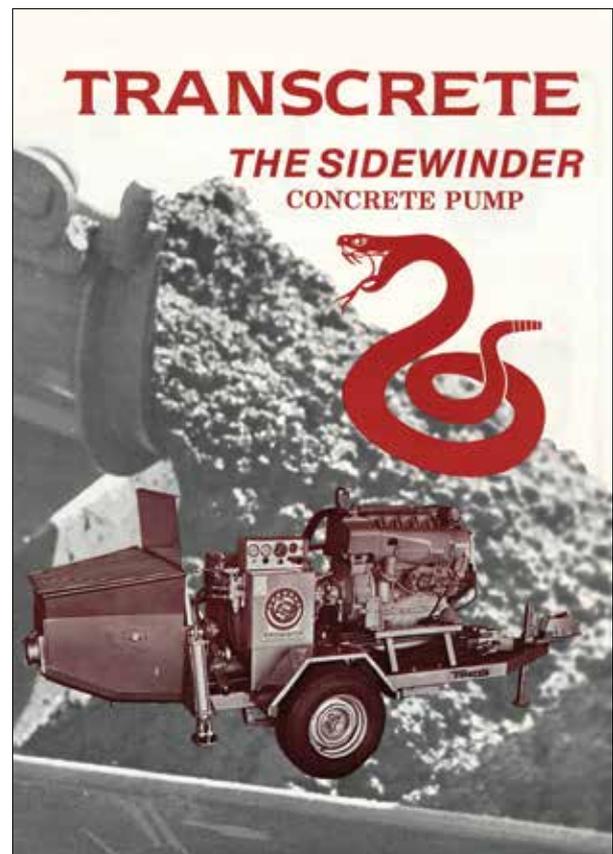
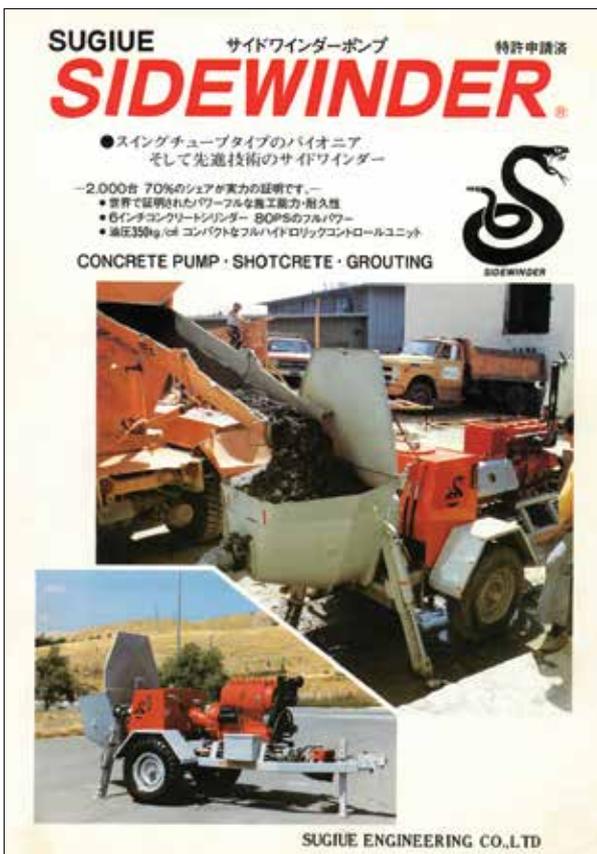
Fran had received a call from Joe Cerretini, a pumper based in Binghamton, NY, who wanted to buy a 30 yd³ (25 m³) trailer pump. Fran gave me Joe's phone number and I called him straight away. We spoke for quite a while and I suggested that if he was keen and had the money to buy a pump, I would bring a pump over to New York and give him a demo, provided he paid up if it does what I told him it would do.

By this time, I had made up my mind that we were going to sell into the United States and called the pump a "Sidewinder." We were already air freighting pumps into Southeast Asia because we didn't want our investment going on a "3-week cruise." We also discovered an airline tariff concession for "mining" equipment.

So, I put a new Sidewinder on a plane to New York and followed it on a separate flight. There was drama using a Greek airline from Australia that offloaded the pump in Europe and then an Irish airline from Europe to New York... but that's another story.

FIRST USE AND EXPANSION IN THE UNITED STATES

Fran had advised Bill Roberts at Allentown about the Sidewinder demo at a site in Syracuse, NY. So, on the day of the demo, we had Fran, Bill Roberts (President), and Earoll Roebuck (VP, Marketing) from Allentown, plus their design



engineer in attendance. The demo was a great success and Joe paid me in full for the pump. Bill Roberts immediately invited me to the Allentown factory, as he was keen to be the Sidewinder importer.

The Allentown facility was great as far as real estate goes, but there was not much going on as far as manufacturing. I could see that they were way behind on the technical side. Bill presented a proposal whereby Transcrete would ship Allentown Sidewinder pumps, fewer diesel engines, and a few other components. His reason was: Why import a diesel engine from Europe to Australia, then fit it and ship to the United States? Why not just buy the diesel engine in the United States and fit it in the Allentown factory? I replied, "Bill, don't complicate things...you buy a complete pump at a fixed price delivered to your factory loading dock." Why mess with extra time and effort and not save any money? We are buying diesel engines at far less than you can buy them. Apart from his "economic logic" he wanted to call the pump "son of Pumpit" after Allentown's large trailer pump. When I asked what number of pumps he would buy, he came back with one a month, maybe! I replied, "Bill, we are selling 20 per month in Australia alone." It was obvious that Transcrete was a much stronger company than Allentown, so I did not conclude any business with Allentown.

Bill did meet me in Honolulu, HI, on my way back to Australia, but I was still not comfortable with him—besides, I had already done a deal with Bennett Brothers. Prior to doing the Bennett Brothers deal, I had approached Rick Horsfall, Vice President at Thomsen, with the offer to sell Thomsen our Sidewinders. Interestingly, in all the time I spent with Bill, shotcrete never came into the conversation.

SPRAYING CONCRETE! THEY JUST USE THE SIDEWINDER IN AUSTRALIA

The deal I made with Bennett Brothers was that Transcrete would provide finished pumps on consignment, with payment within 7 days from sale and paid invoice. Transcrete would provide, design, and pay all advertising costs. We agreed to send over several pumps to kick the deal off. I ended up

spending several weeks with them initially. During the first week at Bennett Brothers, Dick Bennet was having a discussion with a customer having problems spraying rail culverts using a Thomsen boom pump that Dick had modified to handle shotcrete mixtures. He said to me, "What pumps do they use in Australia to spray concrete?" I replied, "Squeezcrete pumps were popular but they now use Sidewinders." Dick came back with, "Like the Sidewinders outside?" Sure, the same.

Dick quickly organized a demo for the Sidewinder down in San Clemente. The contractor laid out over 180 ft (55 m) of 2 in. (50 mm) hose. I think he was trying to show the smartarse Aussie a thing or two. The demo was a great success and they sold two Sidewinder pumps that day. Dick had a salesman, Marion Ryder, who had been in the industry since concrete pumping started and knew pumpers all over the United States. Marion was over the moon and started calling pool builders and gunite contractors. He contacted Action Equipment in Arizona and another pool sprayer, Al Connors. Al was a large contractor in Arizona and was running Mayco C30 HD machines, one on each pool with a backup in the workshop. If one crashed on the job, they would just haul out another. The Sidewinder was diesel powered; Mayco ran on gasoline. Gas was costly and hard to get due to the price rise in the Middle East. So apart from the Sidewinder being reliable, and did not wear out fast, it provided the side benefit that the pumper could siphon diesel out of the concrete truck to run the pump.

Cheers! Part Two will complete the story in a future issue of *Shotcrete* magazine



Born in Australia in 1941, Ian Hay has spent a lifetime in widely diverse careers, including as a butcher, selling neon and outdoor signage, concrete placement, real estate, and eventually selling the Sidewinder S-tube pump for shotcrete placement.