

Collapsible Tunnel Research

by Ian Mallabar

Introduction.

I make no claim that this is a scientific study nor do I make any claims that the views opinions and judgements are those of anyone other than myself. This report naturally focuses on any possible problems with the tunnel but I must state at the outset that the vast majority of runs used in this test caused the dogs in question no apparent issues.

Background.

There has been much discussion on social media and like numerous others I have viewed videos of dogs having problems with the tunnel but could usually see an underlying cause. Maybe the dog didn't enter straight because of the placement of the tunnel or the handler was inadvertently veering off to the next obstacle. However one video in particular showed no such reason.

I decided at my next show I would pay particular attention and take a series of photos to see what showed up. In all I took 936 photos and of those only one small dog had any kind of problem. Looking again at a video on facebook it appeared that the tunnel exit was more restricted than those in my photos.

Discussions with manufacturers revealed that the collapsible tunnel used to have a flared chute but many of those in wide use now have a parallel chute. The ones I'd been photographing were flared but the one in the video appeared to be parallel. Also one was of sailcloth, the other nylon. I decided to test further.

The Tests.

For test I was kindly loaned a tunnel with a parallel nylon chute. I was also donated one with a flared sailcloth chute which I could modify at will. Exercises were set up with straight and angled approaches. 3 small, 3 medium and 6 large dogs were included using the same jump, tunnel, jump sequences.

A Canon digital camera was mounted on a tripod so all shots were from the same location. This camera is capable of taking 8 frames per second. 2,980 photos were taken.

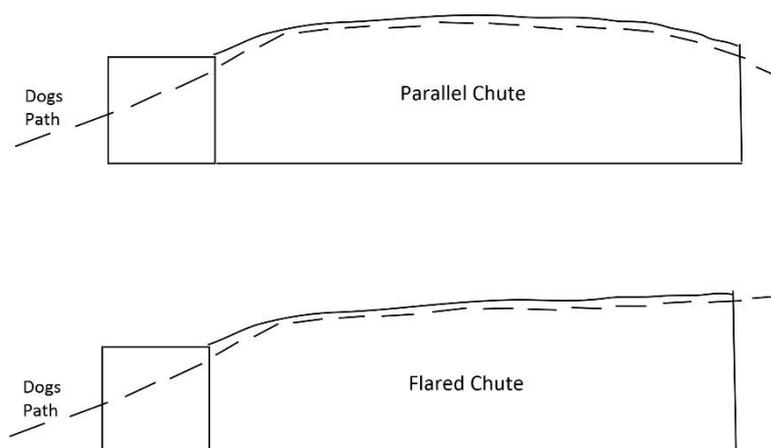
The Maths.

Before starting the practical tests I looked at the maths. Both tunnels were measured carefully. The chute circumference on the parallel example tested was 82ins. The circumference of the flared chute was 84ins at the entrance and flared to 92ins.

As soon as a dog is released into the chute from the rigid entrance it no longer has the restriction of the 2ft rigid base. The base is now as wide as the dog's paws so it has more available height. That is until it reaches the exit which is pegged at 2ft wide bringing the 'ceiling' back down. This is particularly emphasised if the tabs are wider than 2ft.

Given the parallel chute was 82ins then the exit height if measured as a triangle was 26ins. On the flared chute the exit height was 33ins.

This of course all refers only to available height at the exit but the width also needs to be considered. The tests show that this can have an effect if the tunnel is taken anything other than straight. The diagram below shows why. Not a scientific measurement but I believe it demonstrates the point.



Material.

In the samples tested the nylon as used in the parallel tunnel was of lighter weight than the sailcloth used in the flared tunnel. The nylon tended to 'cling' to the dog slightly more whereas the sailcloth was a little heavier for small dogs to lift. On a straight approach there proved to be very little practical difference. However if approached at an angle the dog appeared to have much more grip on the sailcloth as tested than nylon. This proved easier for a dog to remain upright. Were the chute to be reduced in length then any difference would be reduced.

The Rigid Entrance.

Both tunnels were of very similar dimensions and construction at the entrance, being manufactured using the same sheet materials. There was however one marked difference. The entrance on the parallel tunnel had less bracing so had more give and could flex more than the more rigid entrance to the flared tunnel. First instinct is to expect that the ability to flex would be better for the dog however tests proved that this flex allowed the top of the dog to move sideways upon entering the chute at an angle thus giving less support.

The Reality.

The following photographs show the dog approaching at speed and at an angle. While this is a large high drive dog. This exercise showed exactly the same results with the small and the medium dogs.

Nylon Parallel



Sailcloth Flared



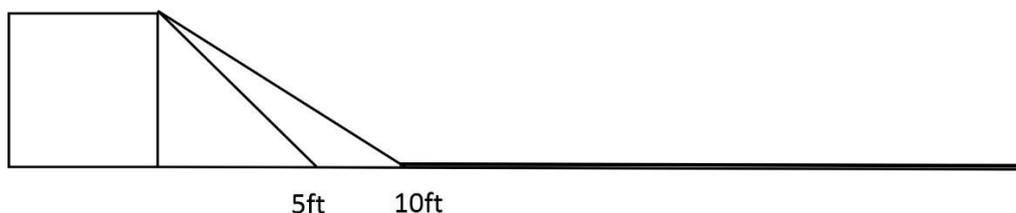
Some people, of which I was one, have said their dogs have no problem with the tunnel. The handler of this dog was totally unaware that their dog had any difficulty until they saw the photos.

Chute Length

My original plan for this research was to test the effect of shorter length chutes. As can be seen this became overshadowed by issues of chute shape ie parallel vs flared and material ie nylon vs sailcloth. Once I started to reduce the length of the chute then this too proved to be less straightforward than anticipated.

I started with a chute reduced in length by 2ft to 8ft This appeared to make almost no difference to the dogs. I then proceeded to reduce by 1ft intervals running the same sequence of obstacles and dogs.

It was immediately apparent that for every foot shorter, the drape also reduced so the entrance to the chute became more vertical. If you picture a 2ft chute on a 2ft high entrance you can imagine the entrance would be vertical so the dog would be running into a curtain rather than a chute. This effectively meant that for every foot removed the dog did not gain the same degree of advantage. This was difficult to measure accurately but as a general guide for every foot of reduction in length there was an average 5ins loss of drape. So the chute entrance became more vertical. Although this was an average the difference seemed to lessen the shorter the chute became.



Although the diagram above demonstrates this, the drape is of course not a straight line but curves at the bottom away from the entrance. This results in the smaller the dog the less vertical the drape. Put more accurately the lower the dogs head the less vertical the drape so a large dog that enters the chute with its head low finds the initial contact with the material less obtrusive than a dog that enters with its head high.

To summarise. The shorter the chute the more vertical the entrance so for there to be any worthwhile gain the chute needed to be considerably shorter but consideration needs to be given to the more vertical drape.

It has often been said in this debate that agility is a 'test' so if the chute is short it reduces the test and if too short removes the test. What is the test? Is the collapsible tunnel testing a dog's ability to enter a blind tunnel with trust in the handler to guide it correctly to the next obstacle? Or maybe testing the dog's ability to physically push open a chute? If the first is true then the less time doing the second the better.

Conclusions.

Further to the initial tests I have now completed more tests with 7 large breeds of dog from GSD's to a Munsterlander. I've also spent a great deal of time studying 5000 photos. I did not find that the rigid entrance as tested caused any great issues for the larger breeds tested. That's not to say the specifications don't need looking at. The tunnels tested were about 22ins high but the regulations allow for as low as 17ins which I consider is too low. I

would not be in favour of increasing the size of the entrance however without extensive tests of the effect on the chute as this is uncharted territory.

I have little doubt that the problems faced by some have been exacerbated by the parallel chute. I also suspect that some have had the tabs fixed too wide apart which has led to a further reduction in exit aperture.

Tests show that Sailcloth (as tested) gives a dog more grip and the dog is therefore less likely to slip although nylon is lighter for the dog to lift. However if the chute is reduced in length by an appreciable amount then these differences become far less significant. I considered the following.

8ft – Almost no difference and not worth considering.

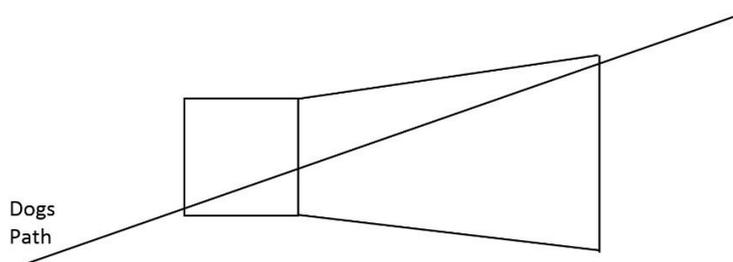
7ft – Of advantage to the large dogs but little advantage to small/medium dogs.

6ft – Of advantage to all dogs tested but still retains the degree of test.

5ft – Of greatest advantage to the small/medium dogs and ok for the smaller 'large' dogs but I suspect the larger dogs would face a more vertical drape.

Whichever length is chosen (if any change at all) I firmly believe we should return to the original flared design as I have no doubt this offers far greater safety. It was the observation of all involved in these tests that the exit almost seemed to 'pop' open as the dog approached the exit and they did not suffer a reduction in height.

With a short and flared chute even if taken at an angle the dog takes almost a straight line. Which in itself is a new challenge to the handler.



Should any changes to regulations be adopted then I would urge manufacturers to revisit the material used for the chute given the changed dynamics. I would also urge judges to make use of the tunnel, try it you might find like me that your opinions change,