Okay, so that's recording.

So we're up 20 seconds ofwards.

Yeah, exactly how to add it out of there Well, lots of barring, which is great.

So can you think of any farming application you might see being solved by Robot?

So it's not just about sheep, necessarily.

This could be something just a separacy.

I because I can see where it's coming it's going to be called labour.

If you sit down and 10 machines working, where it, where, staying his old air.ternity,aps jazz.

So would you be on for it?

I mean, 's..

The only thing is, a robot isn't a human, it can't set and sheer and it can't come in because it started raining and I. Or whatever. .

Yeah.

No, that's very true.

Yeah.

Okay, well, that's great.

That's a good start.

So are there any applications you would like to see solved by robots, like specific things that you would like to see? .

That was yeah.

I' years and I really got it. Looking up a robot share. Like in, what is it?

You want?

Yeah, yeah, yeah..

Would you trust it?

No.

H, H is, you, nothing the unif size, is it?

Not even an apple That apple was that big all the time. Bit of it didn'tla size it was it vegetable inside, I can see where it comes in a lot more than, live.

And also, I suppose, with a live animals.

I mean, I'm not putting words in your mouth, but they are feelinging, thinking animals and I've got to be used to it, then?

Cows have got used to robotic milk rotic milk can youumes..

They go three, four times a day to be milk. ..

So maybe sheep when they get too hot, they would just say, you know what?

Yeah, you know, just.

You get used to everything, don't you?

Yeah.

It's like, everybody's, you know, in the early 90s, like, oh, my word, you've got to tell.

Now we can't get used to being without them.

No, it's just bizarre.

Okay, this is great.

So, what is the hardest aspect of herding sheep? .

P of mood to events, the start.

If I don't want to be rounded all, they will break.

You just gain them.

If you want to a certain point, and if you've got a few too many, whatever amount ofults you've got,'cause sometimes one adult can't handle them, it's getting an aged dog, and then the break, the sheep are very clever, it breaks out the side, and then they see that one breaks and another one will break in another direction, and before you know, it's the circle you and the dog. By that time the dog's getting worn out, because you' got the like the teen aspect of a normal working dog, it can only anything as bit as it it is.

It's not you having to, you can do before you get too hot.

At that point where you either have plenty of dogs, plenty of people who are starting out to get your handling systems out in the position to try and drink them into going there.

I think they're going out the gate and you end up with the handling system, that is for your bonus. More than that, you just made festival, worst situation in surgery.

Stick to your guns, keep a time, you still have to just keep digging in and to get them in there.

Right.

A bit so insightful.

What aspect of herding would you automate them?

They've already got, like, a draft automationated drafted tri.

You can set, when the sheep run down the race, they can be automatically wave, you can shed left, right, or straight on to wherever you said, that's already in.

The only problem of w is with all to m, in my opinion, is it's the numbers game.

The more you've got the, you can afford to put it out.

When you haven't got big sizes, you can't afford the technology because you haven't got enough animals to spread tast but it like farming loads of acres with a spray of sprays of weeds here and not there.

If you've got loads of acres, that exp is a lot of you, are smaller boys with. Economies are scale.

Yeah, yeah, and that's why we're up against it.

We're too big for hobby people, we're not big enough to be large scale.

Right.

So a lot of technologies out of our reach that makes sense.

And it's not the sort of thing that you can enter into a contract and just borrow the equipment or anything like that.

You' really just got to invest in it.

Yeah, it's a tell you truth.

I'm not a big fan of borrowing equipment because you've got this bicurity disease coming in on your bar, of. In the farming world, not this year, though, in a normal year, it's always going to rain tomorrow and the job's got to be done today.

You do neighbour's got it or someone so many miles you can't do it when you want to.

You're only only a week, you can do it whenever you want.

That's how I've always likes it.

You know, you've prepare them because with large she, like, you've got a problem.

You know, you don't know you can't think, oh, it's malap, she's going to eat worming, it's going to get flate.

It could have happened today, you.

Things have got to be available 24/7 with large stuff. The only affordable option really is to own your own stuff and know that you can use it whenever you want.

Mainly for b security security reason disease red.

Yeah.

So back to the question about which aspect of herding you would automate if if technology was available and like anything was possible.

Genie out of the bottle.

Right.

I want to automate this.

Would it be the whole lot?

Would it be?

Well, not really, because you've always got. Always going to have a certain aspect where you need a person who like a shepherd's viewer herdsman's view the said animal.

It doesn't matter what it is because there's always something in the machin is.

I know it's pickle temperature and that sort of stuff to say, whether it's got pneumonia, but you can tell a problem.

Yeah, it is it't time. And cattle when the temperature's up and down, that's where you got an issue. .

Yeah, I think, really, the fairness it can go with you because like this this's wrapped in ways that if it weighs enough, moving it on.

Or worming, you can get automated worming gun and it weighs it and then it tells a machine bringing a teleone tablet,..

Have you' into technology?

But unfortunately, I'm not into ner technology.

I like simple technology that you can mend cell and it's easy.

I don't like a complicated life.

Keep l. Simple, then you can mend it yourself.

Why an older car, for me, is always a choice and over a new car .

If you get loads of wiring and then it rains, you've got problems.

Keep things simple.

But you've got to plug your car into a computer to diagnose a problem, you've got a problem.

Yeah.

Yeah.

This is great.

Okay, we're getting there.

If you..

No, no, no, no, right.

Are there any safety aspects of sheep herding that could be improved, e.g sheep getting stark or injured?

You're never, ever stop sheep doing something, because there's always something new they do in my entire 50 years of life, I've had sheets and we we've never had a she do this before.

We've got a cryons in our field, and with the bees, one managed to jump up and hang itself in the bee, just because they got its feet off the ground, don't get out.

So if there's a hole there, she was gonna stick its head through and the more we're gonna do something different.

It don't matter what you're try and do to stop them, they'll find something else to do it's like with cattle.

It's them all the same.

It's the unpredictability and innovation.

It's like Inva.

Why does this small child always.

When you had DVDD players in videos, why do they always watch folks and we can wear the video games?

There's what they do.

Plug sock games.

Why did your arm?

Oh, no.

I think everybody's got a child who's stuck tweezers or something into a pug.

Yeah, it's like a knife drawer.

All the drawers can customary drawers.

You always want that one open. By your best china.

So, sheep and cattle are the same.

Yeah.

Alright, this is we're getting to the end now.

What qualities make a good working dog in herding?

How might a robot replicate or fail to replicate?

The main thing is a dog that listens.

Right.

That is the most important thing.

If it listens, she can control them.

It doesn't listen, it's time to go home because it's on one and days.

So as long as it lists. Which is always going to work a robotic dog .

I only work on boys commanders, a lot of people work on whistle because it travels better.

But as long as the animal listens, then you can herd the sheet where you want them.

That's the main thing.

Listen.

That's amazing.

Okay, that's a good one.

Okay, we're nearly there.

Don't worry, I don't have to do all of these. Would such a system save time or introduce new complications?

When I say such a system.

I not necessary about the just listening, any sort of robotic dog, would it cause you more problems than it would solve for you?

The problem, the main problem with the robotic is transporting it to the field.

What sort of vehicle does it need to get it there?

How much room does it?

Yeah.

Because if you suddenly get to a field and you pick up, or whatever vehicle, you've got, can it ride on the back of a quad?

If you can ?

Oh, yes.

Yeah, if you can't ride on the back of the quad, you've got to get it there in the hills.

And then, if you've got a problem with the sheet or something like that, you bundle that that in the back if you pick up, you don't be ride on a bump seat because it bends a dunk, you're not going to be able to fold it up and don't know how big they are will.

They're the size of a sheep a bit smaller than a sheep.

How heavy is it to lift into the back of the vehicle when you're finished with it?

Well, these are questions we're kind of asking the sheep farmer. Average coll dog is 20, 25 kilos right?

Okay.

So it's got to be of equivalent, sort of weight that.

You Where are you going to put it when you're finished?

Yeah.

The only thing is, when you switch it' won't jump out, it's coming around the sheep but why you're busy doing something else?

It's like a normal dog dog.

So it needs to almost act like a collie dog.

It's got to have some of those behaviours in order to be useful to you.

Otherwise, you're into a new type of problem in that you've now got to know the peculiarities of this robot rather than just treating it like a dog.

Some people like them to bark on command and some people don't like a dog to bark.

Right.

Okay.

So like command, tell it to bark, to move the sheet.

Yeah. That's how some dogs work better to push them forward when the sheep has been stubborn.

If it won't go forward, that is a main problem the sheet.

On you start circling, you've got to be able to keep pushing them forward.

When you get a big driver like 500 keeping them moving forward Is that right?

Getting that momentum the behaviour. To start circling.

You've lost them.

Yeah.

Brilliant.

Okay.

Okay.

Okay, if a robot dog had no limit, what would you want to do that a real dog can't do?

So if you could just buy a robot dog what aspects of a real dog that a real dog can't do, would you want the robot dog to be able to see?

Trained.

Comably trained.

Yes.

Okay.

He's going to know exactly what's doing.

When you shout come by, it's going to go come by.

It's going to sit instantly.

You and two or three months or every of it.

The dog is always there and it's going to.

How long does it take to train a?

It depends.

It depends very a bits in it or how willing it is.

The main thing is if it is stop.

It's stopping a dog.

If it's keen, it's hard work to stop looking. Them until they get tired.

I've heard that.

Yeah.

When they get to be about six , they're about five.

If you can instantly buy a robotic dump and you shout, bye, and it knows ago, and it felt wise and you out a way and it goes to not light. .

There we go, sorry, that's rough.

If it goes round to the right on away, you okay and if it go, so that's anticlock wise and it come by, not wise yeah, and lies down sits and knows the basic commands war instantly.

I've got a problem with training.

But as a robotic dog has also got to go on all terrains, because we don't just run in black fields.

Right, right.

Yeah, you've got hills, you've got rocks, you've got like rid and for.

Yeah, you've got your walls, your stone walls and things that the collie has no problem jumping over.

Whereas a collie dog can bend underneath a gate with a a robot's going have to open the gate.

Oh, no, that would be a pain..

And how fast will it run?

Well, that's up to you.

I mean, it's like you're going to be able to build that 20 mile an hour..

I had to dump it nearly do 30.

Yeah.

And she'd do it for a long, shed do it quite a long time as well.

Let speed.

And that was a border.

Yeah. Isn't one of the questions, but we've got a bearded.

Oh, yes, so's easier to train.

Very easier to train.

Oh, yeah.

I had a bearded collie, but not a full bearded.

It was cross.

Mine was crossed with a border collie, so she wanted us hairy, but she never got mucky because her hair's wiry. Never stick to her.

But white bearded collies are the easiest collie dog dog to trade.

Right.

Oh, that's good toario.

I'll go back and tell Willow our dog.

Yeah.

Yeah, she won't like that.

Okay, final question.

Would you ever consider a robot robot as a pet?

No, sorry, would you would you consider a robot dog as a pet or just a tool?

No, it would never be a pet because it wouldn't have that affection. How it would look at you when it eyes and sorry, darling, did that mum or the rest of your family sort of thing.

It's never gonna repllaze. .

Some people might do, but it's.

How you have a dog a lot of time.

Would that be one of the features?

Do you think that you might want built in that it would learn to become your friend in some way?

No, you might get too clever and before you know it's working a dishwasher.

That's not bad things. Long as it can fill it't it?

Yeah, yeah, well, that's true.

This has been an absolute joy talking to you about this.

It's only just check it.

Yeah, I think this is still recording.

Was this transcription useful or not useful?