



Please come and visit us on our booth at IPE 2008. You can be sure of some good hospitality and details about a wealth of new products and services that will save you money and improve your production.

**Don't miss the opportunity to improve your hatchery  
whatever your incubation system!**

## Gold'N Plump

**The most advanced single stage broiler hatchery in the US.**

Chick Master would like to congratulate Gold'N Plump on the opening of their fully automated 60,000-square-foot hatchery at Independence, Wisconsin in 2007. The hatchery has the capacity to produce 1.2 million chicks per week from their Avida, A18 and A12, single-stage setters.



Left to right: Tom Solberg - Breeder Hatchery Manager, Bill Patz - Director of Arcadia Operations, Steve Jurek - Executive Vice President of Operations and Administration and Robert Holzer, President of Chick Master

For more details please contact [sales@chickmaster.com](mailto:sales@chickmaster.com)

### To Our Hatchery Friends:

## Chick Master the #1 for Single Stage

Chick Master sold over 600 Avida single stage incubation systems throughout the world in 2007. We now have over 25 years of experience in single stage incubation. With the excellent results achieved by our customers and from the many trials that we run each year we can confidently say that we are the #1 supplier of single stage incubation equipment worldwide.



Come see our Avida A12 Single Stage setter for yourself - it will be 'on show' at IPE Atlanta 2008

2008 is going to be an important year for Chick Master and our customers. We are planning more technical seminars around the world and exhibiting at more industry trade shows and conferences than ever before. Plans are already underway for Chick Master seminars in Alabama, Texas, Australia, South Africa, Turkey, Nicaragua, Argentina and Russia to name but a few. So, look for a Chick Master seminar near you in 2008 - all details will be available at [chickmaster.com](http://chickmaster.com).

We will, of course, be hosting our annual Open House at our plant in Medina, OH, which has been such a success over the last four years. We will also be holding our third Open House at our plant in Bridgwater, UK. Details of both events will be available soon.

Have a very happy and successful New Year.

Get your e-News back issues at  
[www.chickmaster.com](http://www.chickmaster.com)

## Living in an Energy Conscious World

By Ty Phoon

As we open up a new day in a year so young and full of hope (the year that is, not me!) most of us can't help reflecting on the speed with which each year seems to pass and the change that each year brings. Now I'm not necessarily glued to the television news channels or into reading the New York Times every day, but even I know that one thing that has changed significantly in the last few years is our global awareness of the cost of energy. Gone forever are the days when cars can be left idling to warm up, water can be left running while we brush our teeth and air conditioning is left on while we leave home for the day. In retrospect, we are a bit embarrassed that we lived that way and wasted resources for no good purpose, but the cost of energy in much of the world was so low that there was little incentive to conserve it.

That was then. It sure isn't the case now.

One of the unpleasant realities all of us in the poultry industry must come to grips with is that the physical assets in our industry are significantly older than the production facilities in most industries. Hatcheries in particular are not often refurbished. Permits for new hatcheries are not easy to get and the return on the investment rarely measures up to the goals of the corporate shareholders. The infrastructure of our industry has decayed badly and in most cases it was built for a world now dead.

Hatcheries are typically located in moderate to warm climates to ensure ideal growing conditions for the birds on the farm. Most are in rural settings where employment

was critical to the community. When they were built the cost of electricity was rarely considered. In many cases, the local areas provided reduced rate power and water in order to induce the hatchery to locate there. Heating was not an issue. After all, heating oil was less than one US dollar a gallon and natural gas was almost free. Water? Use all you want. The supply was endless.

The decades of the 80's and the 90's were marked by global economic expansion unlike nothing ever seen before. Cities expanded, tyrannies toppled, air got strangely colored, and bottled drinking water got popular. Everyone needed a mobile phone, a wireless computer, a global positioning system. And all of these things demanded huge amounts of energy. New toys like this have a glitter and a glow. We all willingly paid the price to provide the energy our toys needed.

In the last few years all of the seeds of energy waste we planted are coming home to roost to use an old chicken axiom. Oil prices have tripled and more. Gas prices go hand in hand. Electricity costs follow the oil prices in most places. The fuel surcharge on many delivery bills exceeds the cost of the service or the goods delivered! And now another phenomenon has appeared. Global warming. Ice floes are melting and polar bears are dying. We are all left wondering what is happening to our world.

Look closely around you and you will see what has happened already. Carbon Neutral movements make heroic efforts to put back what their members use. Politicians with one eye on the world and the other on their



An interview with a panel of average Chick Master Single stage customers

Continued from issue #10

Do you see a difference in the single stage chick?

The chicks are visibly more active and bigger. Many studies have confirmed that they are bigger due to a larger skeletal system as well as a more developed internal organ structure. A typical broiler is coming out five percent larger than a multistage chick from the same flock.

What about cull rates?

Lower in all cases for single stage birds. There are several documented cases as well as many conversations about this particular subject. We know for certain that the hatch window is very tight so the birds are not stressed by being in the hatcher too long. Most of us have the new series of Chick Master hatcher so we can hold the birds at roughly 97°F (36.1°C). The cull rate is usually less than half the cull rate on multistage chicks.

Is there any known physiological difference you would like to comment on?

One of the more interesting recent studies by Dr. Wineland's group showed that the single stage chicks are doing a significantly better job at absorbing the yolk sac and utilizing the yolk nutrients. This is particularly vital since the alternative is to use muscle tissue. There's a whole technical thing involved here, but the study is available for anyone who wants to read it.

Are the bird sizes consistent?

Clearly you understand that the bird sizes can't be any more consistent than the egg pack they came from. However, with that said, we can definitely state that the single stage birds are extremely close in hatch time, in good physical condition when they reach the farms and exhibit excellent feeding habits. Many of us have noticed and commented upon how much better our processing plants can run with these single stage birds.

Continued on page 3 column 2

## DID YOU KNOW?

In 1925, hens laid an average of 100 eggs a year. In 1979, the World Record was set by a White Leghorn who laid 371 eggs in 364 days!!!

The most eggs laid by a chicken in one day is 7.

The largest recorded chicken egg weighed 235g (8.3oz) and measured 12-1/4" (47.8cm) around its long axis.

The greatest number of recorded yolks in one egg was 9.

Continued on page 3 column 1

*Living in an Energy Conscious World - continued from page 2*

jobs pass legislation providing incentives for reducing energy consumption. There is awareness that the direct and indirect cost of energy is, in most cases, the fastest growing cost in our businesses. Fastest growing--and already one of the biggest expenses. Take a good look at the energy cost that isn't on the surface of your financial statement. What does your distribution system cost? What has happened to the "freight in" cost that gets buried in the cost of the product? How much of the wage increase you have granted is due to the cost of employees getting to work? Trucks, egg trays, waste disposal all rocketing upwards in cost due to the energy component involved in the making and transport of the items.



*The Chick Master Energy Management and Heat Recovery System*

At Chick Master we believe that this is not a blip in the radar screen of time nor the meaningless beating of an annoying drum. This is the ghost of Christmas future. We have concentrated our developmental efforts on reducing the energy usage of our products and on developing new products to reduce the energy waste in hatcheries. Energy management and heat recovery systems are unquestionably our most rapidly growing market place.

Remember the hatcheries we built 40 and 50 years ago were not built with energy costs even remotely considered. This generation of management cannot be blamed for those decisions. The future will only judge us on whether or not we acted to correct the mistakes made by our fathers.

As a businessman, the concept of reduced heating bills, lower electricity charges, more effective transportation of eggs, and reduced water usage are all topics that sound pretty good to me. As a member of the race that would like to see our planet survive, the whole idea of eliminating wasted energy sounds pretty darn good as well!! ☺

## The *Art* of

# STAGE PROGRAMMING

## Parts 7 and 8: The Temperature Reduction and Cooling Phases

In continuation of articles contained in previous Chick Master E-news bulletins, we are now in a position to conclude our detailed look at the setter "Step" program. We will look at stages 7 and 8 from a recommended stage program that would be typically used in a single stage Avida hatchery.

### STAGE 7: TEMPERATURE REDUCTION PHASE

In e-News #9 we looked at the changes required in incubation conditions to provide for the developing embryo's changing needs. We are now at 15 days incubation and recent studies have shown us that the heat output from embryos is rising at a faster rate than we had originally thought just a few years ago. This is especially so with today's high yielding broiler strains. To compensate for this we have to reduce the temperature set point quite rapidly.

The control of the damper remains in Automatic Humidity Control (AHC), but to ensure that egg weight loss is taking

place at the correct level, the humidity set point is lowered from 40% to 30% RH. Additionally, the minimum damper set point is increased so that the damper will remain open at

Stage Number	7	8
Temp Set Point	98.4	98.2
Temp High Alarm	99.8	98.9
Temp Low Alarm	97.9	97.7
Humid Set Point	30.0	30.0
Humid High Alarm	50.0	50.0
Humid Low Alarm	20.0	20.0
Man. Damper Set Point	50.0	50.0
Min. Damper Set Point	50.0	50.0
Damper Mode	AHC	AHC
Cooling Mode	Wat	Wat
Aux Fan On At Damper	40.0	40.0
Aux Fan Auto/Man/Off	off	off
CO2 Set Point	0.0	0.0
CO2 High Alarm	2.0	2.0
CO2 Low Alarm	0.0	0.0
Turning Tilt Time	55.0	55.0
Level Time (mins)	5.0	5.0
Time In Hours	48.0	48.0
<i>Chick Master stage program showing Stage 7 and 8</i>	<b>Temp Reduction</b>	<b>Cooling Stage</b>

*Continued on page 4 column 1*

*An Interview with Average CM Single Stage users - continued from page 2*

### Do you see better livability from the single stage birds?

We see both a better 7 day mortality record and better full-term life expectancy. Both of these factors are well-documented. Seven day mortality is almost always .25% lower with these birds. For most of us, this means a drop from .5% - .7% down to .25-.5%. All you have to do is watch these birds when they are dropped at the grow-out houses to understand why.

### Do you see better feed conversion (FCR) with these birds?

In most cases yes, but not always. Most of us have seen an improvement of between 1 and 2 points on the FCR. Some of us have seen more and, in the case of one location that previously had a problem with late deaths, the impact has been as high as 5 points.

### Do you have a theory about why some locations don't see an improvement?

Lots of theories, but no concrete facts. Weather conditions, farm conditions, disease control are all possible. The most prevalent

belief is that the mix of the feed is the key factor. Those among us who have changed our feed formulations to be more protein enriched have had the best results on FCR.

### Anything worth mentioning about the farm performance of this birds?

Several things. First, these birds start off heavier and stay heavier. Some of us used competitive equipment in our hatcheries and did not find this result. Chick Master convinced us that the key is in the process, not the equipment. The birds now are heavier at virtually every check point. Second, the time on the farm is less. Our birds on average reach target weight in two to three less days. That has forced some of us to rethink our farm management systems.

### Are you changing the way you schedule your houses?

A constant discussion among those of us using this process. It is likely that we will soon be adjusting our planning to increase the annual turns of our grow out houses.

To be continued. Watch this space!

*The Art of Stage Programming - continued*

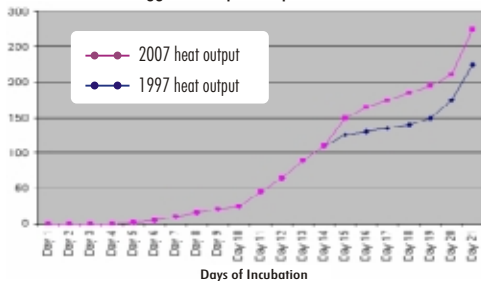
all times in order to drive the egg weight loss. The damper position (now normally 100% open) will, however, react to ambient humidity conditions to ensure that the setter environment is within Chick Master's recommended parameters - which will be covered in subsequent editions once the incubation and hatch process has been described.

## STAGE 8: THE COOLING PHASE

We have now reached the point where embryo growth is all but complete and the main task is to provide an optimum environment to prepare them for transfer to the hatchers and the hatching process. In many ways they are at their most sensitive at this stage, especially to higher temperature levels.

The temperature set point is lowered again for the final time in the setter to 98.2°F (36.8°C) - *the same temperature which will be used at the beginning of the hatcher step program.* Again, egg weight loss will continue with the humidity set point being held at 30% and the minimum damper set point maintained at 50%. In all cases the damper will now be at 100% open during this phase. If CO2 is monitored at this time, it will be noted that the level should be maintained at approximately 0.4% until the eggs are transferred to the hatchers.

Egg heat output comparison



Above is the latest embryo heat output graph that we use to maintain the correct conditions for embryo development and viability. The main differences show in the latter stages of development, especially from 14-21 days, where we see up to a 20% increase when compared to similar graphs from only 10 years ago. With this fact in mind, we have to look very closely at the way our hatchers are managed. The main objective is to keep chicks comfortable and in prime condition in the hatcher. There are many new techniques which help to achieve this in the next phases of the process, the hatcher stage program, which will be dealt with in future editions of the Chick Master e-News 🐣



David Marsh



Angel Salazar

## Ask the Eggsperts

Your chance to ask our hatchery and embryology experts the questions.

Q

What benefits can we get from CO2 injection?

Mr S. Smyth - USA

A

It has always been the case that we can get the natural CO2 level up to 1% (in some cases we achieved a level as high as 2%). The reason for CO2 injection is to achieve a higher than normal CO2 level right from day 1 and with the ability to hold that level until the natural CO2 takes over. We have a table of CO2 injection set points which uses a sliding scale to guide you in the use of this equipment. In essence the younger the flock and the fresher the eggs the lower the set point. The older the flock, the older the eggs, the higher the CO2 set point is. Recent evidence has shown that CO2 injection benefits older flocks with older eggs the most.

Q

How can I tell when it is time to change a fan blade?

Mr G. Klaus-Peter - Germany

A

Any time one is able to detect vibration and/or blade warping with the aid of a digital tachometer is time to buy new fan blades. Cracked, bent and warped fan blades should be replaced immediately.

## FUN TIME

### Chicken Gun

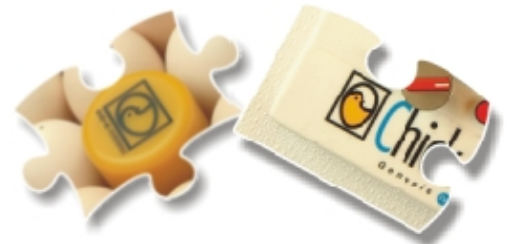
It seems the US Federal Aviation Administration (FAA) has a unique device for testing the strength of windshields on airplanes. The device is a gun that launches a dead chicken at a plane's windshield at approximately the speed the plane flies.

The theory is that if the windshield doesn't crack from the carcass impact, it'll survive a real collision with a bird during flight. It seems the British were very interested in this and wanted to test a windshield on a brand new, speedy locomotive they're developing.

They borrowed the FAA's chicken launcher, loaded the chicken and fired. The ballistic chicken shattered the windshield, went through the engineer's chair, broke an instrument panel and embedded itself in the back wall of the engine cab. The British were stunned and asked the FAA to recheck the test to see if everything was done correctly.

The FAA reviewed the test thoroughly and had one recommendation: "Use a thawed chicken."

## If Spare Parts are a puzzle to you...



visit our on-line shop at  
[www.chickmaster.com](http://www.chickmaster.com)  
 and start earning points today.