

From: Ian Gereg
Curator of Birds, Reptiles & Amphibians
Philadelphia, PA 19104



NOTES ON SHIPPING LATE TERM EGGS

FRAGILE
HANDLE WITH CARE



BACKGROUND

- Shipping adult birds has many logistical challenges: seasonality, direct flight availability, container requirements, space limitations, distance to airport, etc.
- United Airlines is now out of the picture, creating less opportunity to get birds from point A to B
- Shipping fresh eggs has yielded unsatisfactory results: addled eggs with loose/damaged air cells, cracked eggs, poor development, etc.
- With fresh eggs, the best results were found when fresh eggs could be incubated by a live bird upon arrival but even those results were typically not worth the risk



FRAGILE
HANDLE WITH CARE

SOME INADVERTENT PRACTICE

- Collecting eider eggs for USFWS and USGS over several field seasons
- Dozens of eggs collected and transported by boat and car for 6+ hours in cooler packed with eider down and pine shavings (no heat source)
- Younger embryos (<3 weeks) had greater mortality, i.e. lower hatch rates than older embryos
- Older embryos (>3+ weeks) held temperature longer, appeared less affected by severe jostling and had higher hatch rates



FRAGILE
HANDLE WITH CARE



EXPERIMENTATION

- Small clutches of eggs shipped as trials, primarily dabbling ducks but also mergansers and eiders later
- Successful hatches at or near 100% within 0-2 days of arrival
- No perceived difference in duckling growth or vigor from "resident" eggs
- No late or missing deliveries have occurred



FRAGILE
HANDLE WITH CARE

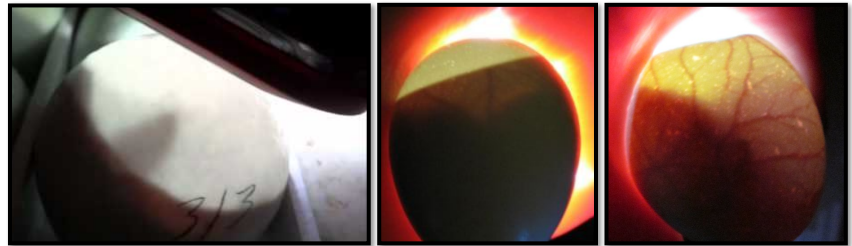


HONING THE TECHNIQUE



- Eggs candled to determine stage of development
- Embryos at the stage of internal pip selected (not external pip!)
- Pine shavings placed into cardboard box with duck down packed on top
- Delivered to FedEx in the afternoon (several hours before truck departure)
- Good success but still room for improvement...

FRAGILE
HANDLE WITH CARE



METHODS & MATERIALS



- Pelican brand hard case, interior foam block inside modified to create firm cups around each individual egg. Save pelican case original box (handy for second layer of protection)
- Optional: shipping warmer(s) -heat emittance varies by brand.
*Demonstrated not to be needed but can ensure longer embryo survival if case misplaced in transit
- Call FedEx or UPS to determine what is the latest drop off time for overnight express to minimize idle time at shipping center.
- Select earliest possible arrival time (usually 8am). Cost is high (\$130-150.00), similar to shipment of adult bird(s)

FRAGILE
HANDLE WITH CARE



CONSIDERATIONS



- Thoughtful consideration should precede shipping live embryos. Make sure you (and your facility) fully understand the risks related to shipping live eggs (and any other living animal) and work to minimize them
- Consider what you will do with surplus chicks, particularly if the genders hatched are not what was preferred (one of the down sides of shipping eggs vs. fledged birds)
- Ensure you have the means of rearing the chicks when they hatch
- Verify state and federal regulations have been followed

**FRAGILE
HANDLE WITH CARE**



RESOURCES:



- FedEx First Overnight: <https://www.fedex.com/en-us/shipping/overnight.html#FirstOvernight>
- UPS Next Day Air Early: <https://www.ups.com/us/en/shipping/services/domestic/next-day-air-early.page?>
- Pelican Brand Hard Cases: <https://www.pelican.com/us/en/products/cases>
- UniHeat Small Pet Shipping Warmers: <https://uniheatpack.com/>

