



# Shop Manual

[www.badgoat.net/ptcaths](http://www.badgoat.net/ptcaths)

February, 2014

## President's Message

John Ellingwood Jr

Hey, cold enough for ya? (hahaha) Yeah I've had about enough. Seems like a heat wave when it gets into the 20's. This time of year I'm glad my job is mostly inside the cab and so far with a few exceptions my nightly trips to Schenectady, NY have been uneventful. I hope everyone else is staying warm and safe this winter.

Your Officers and Directors have been working hard behind the scenes to provide another fun filled season for the members. We held our board meeting at my home in Waterboro on one of the snowier days of January. I really appreciate everyone for driving long distances on a questionable day to attend and contribute to the meeting. We discussed a lot for the upcoming year. Most of which will be discussed at the Annual Membership Meeting on Sunday March 16 at Owls Head Transportation Museum. I encourage everyone to come. Toby Stinson has agreed to give us a guided tour of the museum starting at 9:30 AM. He assures me that anyone attending will learn more about the museum's efforts and exhibits than we ever realized. Be sure to read Toby's article in this months newsletter. We will have our typical potluck luncheon around 11:30 followed by the Chapter Business meeting.

There have been some changes to the suggested donations we make on an annual basis. I want to share these with you now. They will be voted on as a slate after any discussion is held. The current suggestions as decided by the Officers and Director's meeting is as follows

\$150 The Bickford Collection-Yarmouth, Maine

\$150 Owls Head Transportation Museum

\$150 Cole Land Transportation Museum-Bangor, Maine

\$150 Camp Sunshine

\$200 Left Open for tour or gathering stops that are

worthy of donation as approved by the board. There was a lot of discussion about the changes made to our typical donations. I read aloud the ATHS goals which clearly state the mission of the ATHS to preserve, protect, and display artifacts and history of the Motor Truck Transportation Industry. Those goals in mind, along with the fact that the 3 Maine based museum collections chosen honor these specific goals, is what steered us in that direction. It was chosen to continue donating to Camp Sunshine just as good business. The donation amounts have been changed to allow \$200 to be left open. The amount will be used throughout the year as previously specified. There are a lot of great organizations and causes around us that could use some help. We cannot help them all and need to keep focused on who we are and what we do.

We are also going to try something a little different this year in the way we vote for your Officers and Directors. This year we will try, (bear with me) to hold a vote by ballot. All positions will be considered open. If you are currently a member and would like to have your name on the ballot for any of the officers or a directors position please contact me by phone or email. Your name will be added to the list of candidates. We will determine an appropriate time to vote and have the ballots counted by an outside person while the meeting continues. Before the meeting adjourns we will disclose your new Officers and Directors as polls show. It is imperative that you consider each candidate and vote wisely as this board will guide the chapter through the upcoming year. Please also keep in mind that you must be a current ATHS and PTC member to be allowed voting privileges. We currently have one director stepping down and are looking for "new recruits"

In the short term, I look forward to seeing everyone at the Winter Cruise on Saturday February 15 at Pat's Pizza.

## Please See Page 11 for the Chapter Events Calender

Don't miss the Pine Tree Chapter on the world wide web! We have a great website at [www.badgoat.net/ptcaths](http://www.badgoat.net/ptcaths) loaded with pictures of all of our events, current newsletters, officer contact info, and chapter application forms.

"Like us on Facebook" and invite your friends at ATHS PINE TREE CHAPTER

Or you can join the discussion forum at [www.aths.org](http://www.aths.org)

We hope to continue to use all 3 forms of media along with a regular newsletter to keep our current members informed while encouraging new ones. If you would like to save the chapter over \$10 a year you can have the newsletter emailed to you! Just send a message to editor George Barrett

[sheepscot@gwi.net](mailto:sheepscot@gwi.net)

## From Owls Head Transportation Museum

*Toby Stinson*

With the arctic cold descending on us the way it has, it is easy to feel like winter may never end. Personally I was tired of this winter before Christmas. I am very excited for warmer weather and the event season at Owls Head Transportation Museum, including the Truck Show.

Cold sets in, the cars and trucks are tucked away and life in some form tends to slow down. From the outside it looks as if things are slow at Owls Head. The reality is that the staff and myself have been busy since October working and planning for next season. All aspects of the Museum are getting a breath of new energy. Some ways are easy to see and some are more behind the scenes. Across the board our goal is to continue to improve and grow our programs and events. I look forward to sharing some of those changes with you at the meeting March 16. I love my new role here at OHTM.

Its funny, I used to live 5 miles from John Ellingwood and occasionally would stop by to say hi. Now that I've moved 80 plus miles away, we talk all the time. John and I have been talking for weeks about the truck show. From the trustees, to our new Director, to myself, the truck show is important to OHTM.

It is important to me because I love old trucks. I love and respect the fact that I would not be alive if it were not for old trucks. I would not have had food to eat, basketball sneakers, or have gotten to know my father without old trucks. We love these vehicles because we understand they are the vehicles that take care of us. How can Owls Head Transportation Museum as an educational institution better showcase and excite the public about trucking? This is a question that I hope to

constantly reflect on and use as a guiding principle. What should it be? Why should it be? Make it be.

Last year, with very short notice, a great step was made towards this area. Adam and Wendy Libby with Allen Higgins and Paula Hersom volunteering their time and equipment to put on the "Touch a Truck" was a positive step in a positive direction. Thanks to you all. It had a great impact. I had parents call the museum over the fall and say how much fun their child had. My best friend asked if the "Touch a Truck" would be back, his kids loved it. I would like to continue that idea and improve on it. How can we honor the history of the people who drove these trucks? How can we help to better educate the general public and drivers alike? How can we entertain? These are questions that I reflect on constantly. When we become open to ideas and communicate the possibilities become overwhelming. My point is I can see how OHTM can take a truck show and turn it into a Truck Festival!

Like any of us once I get talking about old trucks I could go on forever. I'll save those stories for the show. But for now if you have an idea that would benefit the show this year or in the future, let me know. If you would like to help out or volunteer in some way, let me know. We could use you. Would you like to help with parking, or demonstrate something? Rather than focusing on what should have been or was, I'm looking to what should be and what can be. July 19th and 20th will be two of my favorite days next summer. I can't wait.

Toby Stinson

Pine Tree Chapter Member

Event Coordinator Owls Head Transportation Museum

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## From the Editor

*George Barrett*

Many of you who have just opened this news letter are wondering where it came from. It is put together by the members of the Pine Tree Chapter about 10 times a year to further carry out the mission of the ATHS. The directors decided that we would print extra copies of this issue and send them to those in Maine who are members of the ATHS but not the PTC.

You'll see the various activities we've planned for the first part of the year on page 11 and hope you'll join us, even though you're not yet a member. We have a great time with lot's of common interests.

I think this is the first issue to have a story about

wedding and antique trucks and we jump all the way to technical aspect of truck history. In between we've got the activities and travels of our members and the history of trucks within the Pine Tree State. If you've got anything to sell or something you're searching for the classified section is free

A reminder to the membership, please send me anything you think might be of interest to your fellow members. As members get a new truck I'd like to mention it in these pages, a photo would be great here or on the web site. Speaking of the web site you'll enjoy visiting it and one more thing; if you'd like to receive the newsletter on line please let me know.

In closing, let me know what you'd to see in the "Shop Manual" and I'll do my best to research and write it up. Look forward to seeing you on

## Washers on Battery Bolts

*Jon Doyle*

Next time you change batteries on whatever you're running, think about the number of washers that we introduce between the head of the bolt, the nut, including flat washers and lock washers. I had the occasion recently to change out the batteries in our boat, Fundy Endeavor. It's got a 1271 and a 32 volt system. That means that it's got four 8 volt marine batteries. Good stuff, expensive, oh my God heavy, and about \$650 a piece at my price.

I've been having some discussion with a friend of mine who writes articles for Cruising World on boat maintenance and he is of the view that you should never introduce washers under the heads of, nuts of, or in conjunction with battery bolt lugs. He's absolutely right. When I got all done de-washing those batteries, I had a stack two inches tall. Think about that. If I told you to put two inches worth of washers on a single battery bolt, you'd think I was nuts. Think of the resistance that you've introduced into the system. If you've got a marginal system, you can predict the result. The most you ever ought to have is some star washers, internal tooth or external tooth, to give you a better connection. One other thing that you'll notice is that you get less thermal expansion as the battery terminals cool or heat without washers. Get them out of the system; my recommendation also is you use military style terminals. They are flat with bolts that run through them and never ever use what the trade calls emergency terminals where you put the end of the cable underneath the little clip with a couple of teeny, tiny bolts or nuts to hold it together. It's fated to give you less juice. Again, reflect on a two inch stack of washers and think whether you really want that all in the aggregate adding to the resistance of your system. No wonder those Cummins' don't start well!

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## Book Review

*George Barrett*

I've had a book in my library for a little over four years that I don't pick up very often because I think of it as more of a source of reference but when I took the time to read about Lombard and Linn it turns into a great story book. When you read about Alvin O. Lombard (1856 - 1937) in these pages you'll understand the real story of how the crawler tractor that we take for granted today was developed over one hundred years ago in Maine and California.

The Book is *A HISTORY OF MAINE BUILT AUTOMOBILES & MOTORIZED VEHICLES 1834 - 1934* by authors Richard and Nancy Fraser. It came on the market sometime in 2009 and was made possible in part through the generous support of the Owls Head Transportation Museum's Lang Education Center and Library, the Seal Cove Auto Museum, and the Richard C. Paine, Jr. Automobile Collection Charitable Trust. How lucky we are to have had these philanthropic organizations get together with these hard working authors so we have this history recorded.

I have listened to a variety of tales about Holman Harry Linn (1877 - 1937) but I believe the story as written by the Frasers. The various tractors he had Lombard build for him tells a lot about him.

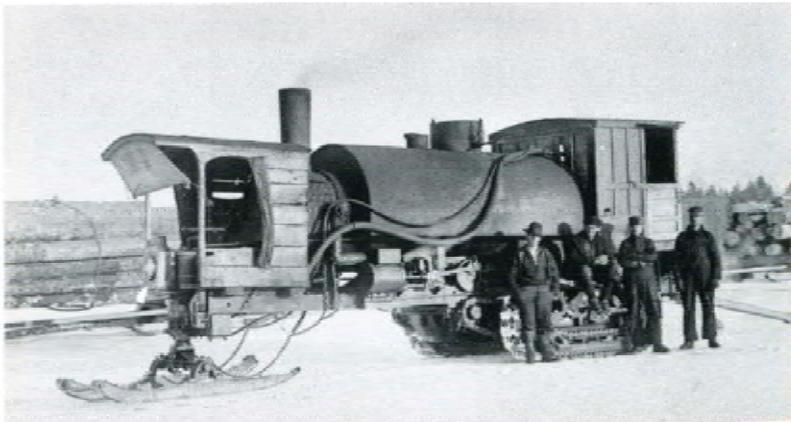
This high quality book has photos, drawings, Maine license plates, a great index within its 518 hardbound pages. I don't know if the book is still available but I'm sure a message to the Frasers at PO Box 39, E. Poland, ME 04230 will get you an answer.

## What are These Guys Doing?



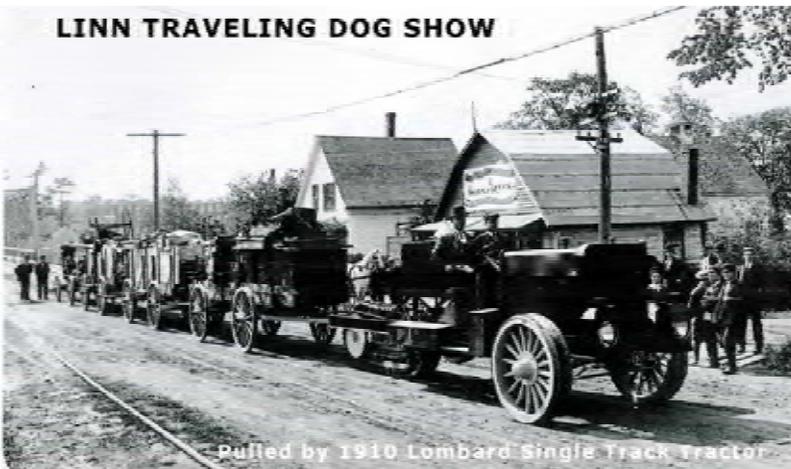
From past Pine tree Chapter gatherings, at Daryl Gushee's get together for a practice run. I took the picture in December of 2002. It sounded great as it glided over the field, smoother than any truck would be.

I also remember another time when there was plenty of snow and there's just no words to explain the capability of that Linn to plow snow. What a thrill to watch that rig, an original unrestored truck, work at what it was designed for only in this case it was not working because it had to, only because we were enjoying it.



To the left is the very first successful or at least the first patent for a "track laying" machine. It is a Lombard log hauler.

Most enthusiasts of tractors and construction equipment usually think of Best and Holt as the two men who got together and formed the Caterpillar Tractor Co. in 1925. What most don't realize is that Alvin Lombard had the patent on what we now call a crawler which he sold make it possible.



A Mainer named Linn liked the Lombard concept and ordered a special tractor to pull his "dog and pony" show from town to town. Both Linn and his wife were very talented and the show traveled a fairly wide area. This is one of many interesting crawler tractors and half tracks that Linn had Lombard build and which he eventually built for himself.



Linn finally settled in upstate New York and got involved with snowplowing with Frink. His halftrack was used by many contractors in Maine for road and dam building jobs because of its ability to move over soft uneven ground. Linn trucks, similar to this Lombard, were manufactured until a few years after the second world war.

## Driving & Steering

*George Barrett*

You'll find me writing and talking about driving trucks, I never did much truck driving, although I liked to. I drove many different trucks but just a little bit on each truck. Same with machinery, ran many rigs but just enough to unload or move them around and do a little demonstrating. The story that follows shows how a little luck led to about a half hour of enjoyment, one I'll never forget.

Ever since I was a kid I've had a strong interest in two things, trucks and cranes. When the two of them are put together then life really gets great! Back in 1968 I was selling construction equipment and this story really starts when Stone & Webster, the large Boston based engineering firm began building the Maine Yankee nuclear plant in Wiscasset. They needed a large truck crane and Link-Belt, one of the products I represented, had just what they wanted, an HC-218 82 ton capacity machine.

I made a number of calls to the site, mostly talking to the assistant superintendent, Jim, trying to figure out exactly when they were going to need the machine and what the procedure would be to purchase. He assured me that we were on the bidding list and would be notified when the schedule for purchase and delivery was established. I was concerned that the dealers in southern New England would be throwing in some low bids and I trying desperately to show them how we could handle all their needs with regards to rental, service and parts as well as sales. Jim and all the staff on site were very friendly and seemed real happy to be in Maine for a few years.

I remember it well, Patriots Day, Friday April 19, 1968. Back then it was celebrated on the actual day, mostly in Massachusetts, some in Maine, but it was not a real holiday nation wide. It was a beautiful day, some offices were working, some not, but after lunch my travels took me to Wiscasset where I had a new boat out on a mooring in the harbor and I was giving a lot of thought to grabbing the dinghy going out to install a few needed appliances on it and making the day half work and half play. I sat there in the car looking out over the harbor and suddenly thought about that crane I wanted to sell to Maine Yankee.

I reasoned that being from Boston it was probably a holiday on site but I thought it worth a try, it wouldn't take long, I could get back to the boat, so off I went. Jim was in his office, I didn't see too many others. We talked for a few minutes and then he asked if we had put a bid in on the crane. I said no, we had not received any specs and then a look of complete astonishment came to Jim's face. He went to his files and finally found that the Boston office had not sent anything to the Maine dealers and the bids were due Monday morning. I thanked him for his help and concern as I left and contemplated my next move.

All Maine vendors had been told by Central Maine Power that they would be considered for all products they could supply so after an unsettling feeling all weekend I arrived at the office of CMP's chief engineer at 8:15AM having no idea of what to expect. I had never met the man but had heard casual mention of him that he was a good fellow. There was no wait, next thing I knew I was telling him of my problem. Within five minutes he picked up his phone, dialed a number and was telling whoever was on the other end to cancel all bids received and he would review a new set before they were mailed out. It was probably the shortest most productive encounter I've ever had.

We did in fact get the deal with delivery set for early September. After some very pleasant negotiations with

Stone & Webster it was decided that in order to avoid the extraordinary costs of having the union unload the crane on the plant site we would have the railroad drop it off at the yard in Wiscasset, just behind Red's Eats. I got Ivan Shaw to supply and set the blocking in place. I don't know where he got it all, there must have been six guys making the ramp and blocking the flat car. It's a very touchy thing to make sure that when all the weight of crane is over the end of the car that the car is unable to move. Ivan, and I'm sure Jack and Danny were there, did a fantastic job and with the help of our two servicemen Bob and Steve within two days we were ready to deliver.

A few weeks earlier I had some back and forth with the State Highway Commission about a permit to drive the crane to the plant about five miles away. I of course wanted to carry full counterweight (bumper and upper works) and 80' of boom and it was going to be a real problem if we couldn't. The carrier was 11' wide, a little over 100' long with the boom but it weighed 132,000 lbs. on 14.00-24 tires. The counterweights gave it a fairly even axle loading but with the old rule of 600 pounds per inch of tire width we were still 32,000 pounds over. I don't know why they gave me the permit, the two conditions were that we start at 5:30AM and get two state troopers for an escort.

It was dark, I said to Bob "who's going to drive it?" He shrugged his shoulders and I said "well I'll do it." I think he knew all along that I wanted to drive it. I started to back it out onto Route 1, Bob was in the upper works to swing the boom around the corner. Suddenly the trucks horn starts blasting, loud, I almost thought a locomotive was coming. I noticed we weren't moving even though the clutch was engaged. The horn was because of low air pressure, I still don't know why. Steve told me the reason I wasn't moving was because the ground was very uneven and only one of the four rear duals had traction. I switched the interaxle differential on, the air pressure came up, the horn stopped, and we gently moved backward onto the road, over the railroad tracks, and got the house lined up so the boom was straight behind us. Bob put the House lock pawl in place to prevent any swinging but stayed up there.

At last, the enjoyable part of the whole deal began. I didn't shift a gear until I got up the hill. The rig felt good, well balanced, I was comfortable. I grabbed a few more gears, thankfully the shift linkage was well lubricated and as much as I highly regard the 8V-71 Detroit that was the standard engine I was very happy to have the 250 Cummins 855 cid block beside me. I don't know how fast we were going, not very. Sometimes a truck crane with boom over the rear will get bouncing but that never happened and before long I'd covered the five miles and was at the gate where the Cyr brothers, who were to be the operator and oiler, were waiting.

I am very certain that the crane is still alive and well in Maine although it is no longer Link-Belt red. After it got done at Maine Yankee it was purchased by a fellow from the Portland area named Al Manzo. I believe Harry C. Crooker and Sons purchased it and my guess is that it's as nice a machine today as it was 45 years ago. I see it at their yard in Topsham, looking good in Crooker yellow.

In its day the HC-218 was regarded by most as the finest crane of its size available and the first to be sold in Maine. It started out as 70 ton machine, model HC-208, in 1965 but after further testing a year later it was rated at 82 tons as a model HC-218. The low profile upper cab allowed larger tires than the normal 14.00-20 which I'm sure gave me a better ride.

# Trucks are Part of the Wedding

*Steve Corson*

My son, Nick, finally received some pictures of his wedding with my B-61 in them. A little background to go with the pictures. The wedding was August 24, 2013. Nick married Kim, his girlfriend of 5 years who he met while attending Rochester Institute of Technology. The wedding ceremony took place at Rockport Marine Park, Rockport Harbor, Maine. The reception was at our residence about one mile from the harbor. Nick drove my 1957 B-61, also

known as "Fine-ly Dun", to and from the harbor with Kim naturally joining him on the trip from the harbor to our place. Jan and I drove my 1966 B-75, "Black Dog", to and from the ceremony.

The weather that weekend was perfect and all went great, everyone said they had "a blast"! As you can see in the pictures, I built a set of steps to make it possible for Kim to get in and out of the truck with her wedding dress on. There were 9 steps each having a 4" rise. You can also see that I attached 11 mini kegs to the back of the truck when they were leaving. I couldn't just have regular cans behind the truck--I figured--big truck--big cans!

A little background on the truck. I bought the truck 8 years ago this month (November) and during the following winter began disassembly. One thing led to another and before the winter was over the frame rails were on the shop floor with nothing else attached. The cab was stripped of everything and 3 tons of black beauty later every piece possible of the truck was sandblasted, primed, and painted. Re-assembly did not go as well. I quickly had the chassis assembled and ready for the engine and transmission, but here is where the delays started. Due to circumstances I will not go into, it was four years before a different engine and the original tranny were put back into the chassis with the help of Bob Stackpole on this end and Danny Malone on the southern end.

Two more years passed with very slow progress until Nick and Kim got engaged in 2012. In October of 2012 Nick told me he wanted to use the truck in his wedding the next August. Mild panic immediately set in but I was determined not to disappoint Nick. I worked non-stop (it seemed) putting the truck back together which included a new wiring harness, rebuilt wiper motor, new brakes, airlines, etc. Everything that hadn't been sandblasted had to be cleaned and painted or polished. I did not get the cab on the chassis until April. Everything took longer than I thought but in the end I made it! I am happy with the truck and all that is left is to put the 5th wheel on. I know many of the members have been through this themselves but this was a first for me. Looking back, I am glad I did it. Looking ahead, I don't think I will do it again -- but who knows.



## Post War Medium Duty Internationals II

### Clayton Hoak

In this issue we are going to review the International CO-190, CO-200, and CO-220 line, introduced in 1954. Ron Adams, in his book *International Heavy Trucks of the 1960s*, states "The CO series was the middle-sized cab over engine; bigger than the CO-Loadstar and smaller than the Emeryville." The CO series pre-dated the C-O Loadstar by eight years and the DCO Emeryville by two years.

The original CO-190/ 200/ 220 series trucks were single axle with IH inline 6 cylinder gas engines. The CO cab over series, which continued through 1972, also offered trucks with Cummins diesel engines, International V8 gas engines, and liquefied propane gas (LPG) engines (modified International 6 and 8 cylinder gasoline engines). The series also offered trucks with live and dead (single drive/ tag) tandem rear axles.

According to Fred Crimson (*International Trucks*; 1995) the new cab was as a Diamond T design with

minor modifications to fit the International chassis; and in August 1954 International and Diamond T entered into an agreement to have had Diamond T build the CO models at its' Chicago plant through 1958.

The International truck model nomenclature for the CO cab over series is as follows:

- CO –single axle inline 6 cylinder cab over
- DCO single axle diesel cab over
- VCO – single axle V8 gasoline cab over
- COF/ DCOF/ VCOF – live tandem axle inline 6/ live tandem axle diesel/ live tandem axle V8
- COT/ DCOT/ VCOT – pusher axle inline 6/ pusher axle diesel/ pusher axle V8.

In each series (190/200/220) International offered a range of GVWs as well as a dedicated road tractor (Roadliner) option. A CO-180 was introduced in 1956. Due to missing some model information a complete model by model capacity comparison is not possible, however the following table provides some of the basics:

	<i>Standard Engine / HP</i>	<i>GVW</i>	<i>GCW</i>	<i>Data Year</i>
CO-180	BD-282/ 137	17,000 - 23,000 lbs	40 - 45,000 lbs	1955-56
CO-180	Discontinued			1970
CO-190	RD-372/ 165	21,000 - 25,000 lbs	50,000 lbs	1955-56
CO-190	RD-372/ 165	26,000 - 30,500 lbs	50,000 lbs	1970
CO-200	RD-406/ 175	24,000 - 29,000 lbs	55,000 lbs	1955-56
CO-200	RD-406/ 193	30,500 - 35,000 lbs	55,000 lbs	1970
CO-220	RD-501/ 212	26,000 - 30,000 lbs	65,000 lbs	1955-56
CO-220	RD-501/ 215	30,500 - 35,000 lbs	65,000 lbs	1970
DCO-200	JT-6-B / 175	24,000 - 29,000 lbs	55,000 lbs	1955-56
DCO-200	JT-6-B / 175	30,500 - 35,000 lbs	55,000 lbs	1970
DCOF-190	JT-6-B / 175	30,000 - 41,000 lbs	55 - 62,000 lbs	1955-56
DCOF-195-H	NH-180 / 180	43,000 - 46,000 lbs	79,000 lbs	1970
VCO-220	V-461 / 226	26,000 - 30,000 lbs	65,000 lbs	1955-56
VCO-220	V-478 / 234	30,500 - 35,000 lbs	65,000 lbs	1970

Options for the CO line were typical of the period - heavier front axles, two speed rear axles, sleeper cabs, one or two engine size options, one or two transmission choices (four or five in later years), and disc wheels. Uncommon, but not unheard of, were 4x4 CO models. A 1958 CO-190 with an American Coleman front driving axle and a pair of 1963 VCO-190s with NAPCO front driving axles are shown in *Crimson's International Trucks*. The 1958 CO 4x4s were supplied to the Air Force and the 1963 VCO 4x4s were furnished to Kansas City Power and Light.

The CO series changed very little from 1954 to when it was discontinued 1972 and replaced by the Cargostar. Next issue we will review the Loadstar CO, and possibly the Cargostar – the medium duty successor to both CO Series and the Loadstar CO Series.

series trucks and had commented the series appeared to have been more cab forward than cab over. Two sources for my previous article either described the LC/RC/SC 160 and 180 series trucks as cab over trucks. After the article was published I acquired a copy of the 1950 International LC-160 and LC-180 full line sales brochure which clearly identifies the LC-160 and LC-180 trucks as a cab forward series. My apologies for this mistake and any confusion it may have caused.

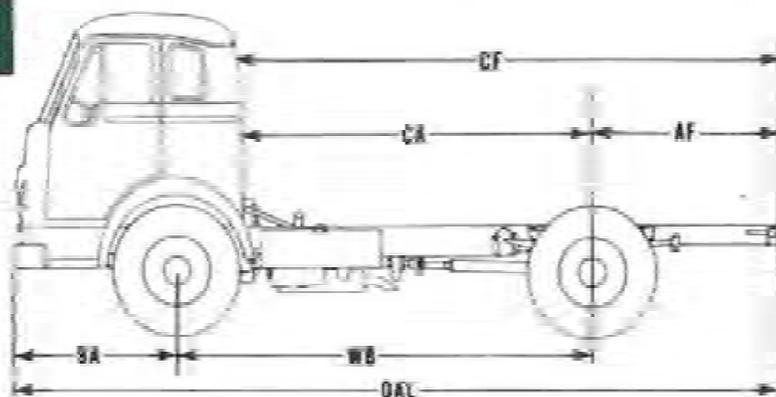
#### Sources

- International Heavy Trucks of the 1960s; 2006 by Ron Adams; Iconografix
- International Trucks; 1995 by Fred W. Crimson; Motorbooks International
- Various International Truck CO/ VCO/ DCO Specification Sheets



# INTERNATIONAL® CO-220 SERIES

MAX. GVW, 30,000 LB. • GCW, 65,000 LB.



MODEL	GROSS VEHICLE WEIGHT RATING	NOMINAL GROSS CARRYING CAPACITY (body, equipment and payload)	GROSS COMBINATION WEIGHT RATING
CO-220	26,000 LB.	15,500 LB.	65,000 LB.
CO-221	28,000 LB.	18,500 LB.	65,000 LB.
CO-222	30,000 LB.	20,500 LB.	65,000 LB.
CO-225	30,000 LB.	20,500 LB.	65,000 LB.

## CHASSIS DIMENSIONS

Dimensions are shown in inches. The following dimensions are the same for all wheelbases with 10.00 x 20 tires:

Tread: Front wheels, 70<sup>11</sup>/<sub>16</sub>; rear, 72.  
Road clearance: Front, 11<sup>1</sup>/<sub>4</sub>; rear, 9<sup>1</sup>/<sub>2</sub>.  
Over-all width: Front, 89<sup>1</sup>/<sub>4</sub>; rear, 94<sup>11</sup>/<sub>16</sub>.  
Height to top of frame from ground, loaded: Front, 32<sup>3</sup>/<sub>4</sub>; rear, 33<sup>3</sup>/<sub>16</sub>.

Wheelbase (WB)	99	111	123	135	153
Over-all length incl. bumper (OAL)	186 <sup>11</sup> / <sub>16</sub>	220 <sup>11</sup> / <sub>16</sub>	232 <sup>11</sup> / <sub>16</sub>	250 <sup>11</sup> / <sub>16</sub>	274 <sup>11</sup> / <sub>16</sub>
Back of cab to c/l of rear axle (CA)	71 <sup>11</sup> / <sub>16</sub>	83 <sup>11</sup> / <sub>16</sub>	95 <sup>11</sup> / <sub>16</sub>	107 <sup>11</sup> / <sub>16</sub>	125 <sup>11</sup> / <sub>16</sub>
C/l of rear axle to end of frame (AF)	34	56	56	62	68
Back of cab to end of frame (CF)	105 <sup>11</sup> / <sub>16</sub>	139 <sup>11</sup> / <sub>16</sub>	151 <sup>11</sup> / <sub>16</sub>	169 <sup>11</sup> / <sub>16</sub>	193 <sup>11</sup> / <sub>16</sub>
Bumper to c/l of front axle (BA)	53 <sup>11</sup> / <sub>16</sub>				
Turning radius incl. bumper (ft.)	22 <sup>1</sup> / <sub>2</sub>	24 <sup>1</sup> / <sub>2</sub>	26 <sup>1</sup> / <sub>2</sub>	28 <sup>1</sup> / <sub>2</sub>	32
Weight w/cab, fuel, oil, water, standard Model CO-220, approximate (lb.)	8904	9079	9121	9233	9291

## STANDARD SPECIFICATIONS

**Axle, Front:** Drop-center, I-beam, heat-treated drop forging. Steering knuckles of drop-forged, heat-treated, chrome-molybdenum steel. Rated capacity, 7,500 lb.

**Axle, Rear:** Full-floating, single reduction through spiral bevel gear. Hotchkiss type final drive. Pinion is straddle mounted between roller bearings. Chrome-molybdenum steel axle shafts. Heat-treated, one-piece, tubular banjo type steel housing. Differential and wheel bearings are tapered rollers. Rated capacity, 22,000 lb. Axle reduction, 5.43 or 6.66 to 1.

**Brake, Hand:** Internal expanding drum type on propeller shaft.

**Brakes, Service:** Air, two shoes per wheel, double-anchored. Total lining area, 625.8 sq. in. 7<sup>1</sup>/<sub>4</sub>-ft. air compressor, large capacity air reservoir, treadle-operated relay and release valves, slack adjusters.

**Cab, Counterbalanced:** Equipment includes right side door lock; extension type left side rear-view mirror;

safety glass windows and green-tinted safety glass windshield; adjustable padded spring type driver's seat and back cushion; spring type passenger's seat; right and left side sun visors; dual right and left side electric windshield wipers; dome light; ash tray; floor mat.

**Clutch:** 14-in. diameter, single plate. Coil spring vibration damper.

**Cooling System:** Centrifugal pump circulation, V-belt drive. Fin and tube radiator. Capsule type thermostat. Total capacity, 28 qt.

**Directional Signals:** Type A, front.

**Electrical System:** 12-volt. Full-automatic distributor. Battery, 70-amp.-hr. capacity at 20-hr. rate. 30-amp. generator. Sealed-beam headlights. Edge-lighted instruments. Starting motor.

**Engine:** International Royal Red Diamond 501, six-cylinder, valve-in-head type. Bore, 4<sup>1</sup>/<sub>2</sub> in.; stroke, 5<sup>1</sup>/<sub>4</sub>

Continued Specifications of  
**International CO-220 Series**  
**Max. GVW 30,000 LB. \* GCW 65,000 LB**

in., displacement, 501 cu. in.; compression ratio, 6.5 to 1. Maximum brake horsepower, 212 at 3000 r.p.m.; maximum torque, 444 lb.-ft. at 1600 r.p.m. Sleeveless. Seven steel-backed, replaceable-shell, precision type main bearings; total projected area, 34.706 sq. in. Six replaceable-shell, precision type connecting rod bearings. Eatonite-faced, sodium-cooled, slo-roto exhaust valves. Exhaust valve seat inserts.

**Equipment Standard:** Governor. Plain type tachometer. Front bumper. Combination tail and stop lights. Parking lights. Horn. Spare rim.

**Finish:** Frame and wheels, red. Grille, cab and fenders painted in your choice of 12 attractive solid colors.

**Frame:** Pressed steel channel,  $9\frac{1}{8} \times 3\frac{1}{2} \times \frac{5}{16}$  in., except on 99-in. WB,  $9 \times 3\frac{1}{2} \times \frac{1}{4}$  in.; section modulus, 12.80, except on 99 in. WB, 10.20. Five crossmembers on 99-in. WB, six on 111-in. and 123-in. WB and seven on longer WB.

**Fuel System:** Downdraft carburetor. 2-qt. oil-bath air cleaner. Horizontal-diaphragm, mechanical fuel pump driven from camshaft; fuel filter. 31-gal. fuel tank.

**Lubrication System:** Pressure feed to all main, connecting rod, piston pin and camshaft bearings. External gear oil pump driven from camshaft. Wire mesh floating oil strainer.  $1\frac{1}{2}$ -qt. replaceable cartridge type oil filter. Crankcase capacity (refill), 9 qt.

**Propeller Shaft:** Large diameter, heavy-gauge steel tubing, dynamically balanced, 2-piece shaft. Self-aligning, silent-spin center bearing. All metal, needle bearing, anti-friction universal joints.

**Springs:** Semi-elliptic. Front, 52 x 3 in.; rear, 56 x 3 in.; auxiliary, 36 x 3 in.

**Steering:** Semi-reversible, dual ratio, cam and roller-mounted twin lever gear.

**Tires:** Front and dual rear, tubeless, 11-22.5, 12-ply.

**Transmission:** Five speeds forward, one reverse. Constant mesh helical gears in third, fourth and high. Large power take-off openings on right and left sides. Reductions—low, 6.37 to 1; second, 3.404 to 1; third, 1.738 to 1; fourth, direct; high, .788 to 1; reverse, 6.40 to 1.

**Wheels:** Cast spoke type.

**OPTIONAL EQUIPMENT AT EXTRA COST**

**Axle, Front:** Oversize; 9,000 or 11,000 lb. capacity.

**Axle, Rear:** Two-speed; reductions, 5.43/7.39, 6.714/9.138. Double reduction, capacity, 28,000 lb.; reductions, 7.21, 8.69, 9.76 to 1.

**Brakes, Service:** 12-ft. air compressor, limiting valve, front wheels . . . Semi-trailer connections; hand control valve.

**Cab:** Sleeper.

**Directional Signals:** Type A, rear.

**Electrical System:** 50-amp. capacity generator. Dual 6-volt, 150-amp.-hr. batteries.

**Engine:** International Royal Red Diamond 501 equipped for operation on LP Gas . . . High altitude equipment.

**Finish:** Two-tone color combinations.

**Frame:** Inverted L-shape reinforcement; combined section modulus, 21.45.

**Fuel System:** 31-gal. auxiliary fuel tanks. 50-gal. dual safety tanks. 43 or 62-gal. LP Gas pressure fuel tanks.

**Heater and Defroster:** Recirculating or fresh air type.

**Power Steering:** Includes power cylinder, valve, pump, reservoir and connections.

**Springs:** Heavy duty, front, rear and auxiliary.

**Tire Carrier:** Underslung, at rear of frame, 111-in. or longer WB.

**Tires:** Tubed, up to 11.00 x 22, 12-ply.

**Tow Hooks:** Tow eyes, front. Tow loop, rear.

**Transmissions:** Five speeds forward, direct in fifth, choice of one or two reverse. Eight speeds forward, two reverse, constant mesh type.

**Wheels:** Disc type.

## Notices and Classified Ads

I got word that one of our new members, Ralph Rogers of Woolwich, has been in the hospital for a while and had a pretty good overhaul. He's out now and doing all right. We all hope for a speedy recovery.

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### 2015 Calendars

*Stephen Marshall*

Hi everyone - 2014 is upon us and it's time to start thinking about the 2015 calendars. Last years calendars were a first for the Pine Tree Chapter and were a great success. We had 100 calendars printed and sold all but 17 at last count, so I was told . Last year was kind of a short notice idea and some members said they knew nothing about it. So I'm starting to put the word out early this year, so everyone will know and have a chance. So start thinking about the pictures you would like to submit of your truck or trucks. Send as many as you would like. Remember Pine Tree Chapter members only. Pictures of high quality from a digital camera or smart phone work best. Snap shots, old prints and Polaroid's tend to get too blurry and can't be used. Let's get some good pictures of your trucks, restored, unrestored, sitting in the

field, you get the picture. Email pictures, name and a brief description of the truck or trucks to me if possible. Or if not get them to any of the chapter officers and they can help to get them to me. A deadline has not been set yet, but I will inform everyone in the next newsletter and try to keep reminding everyone to send in pictures.

Thanks  
Stephen Marshall  
email: srmcam86@gmail.com

P.S. If you have no way of taking a good picture and would like to submit your truck. Contact Charlie Huntington and see if he has a picture of your truck. He's been taking pictures of members trucks at chapter event for some time now. Maybe he could help you out.

*Contact me and maybe we can get together, I'd be happy to take the picture. Editor*

**For Sale:** 1951 Ford F-7 Rack Body truck. No Rust, 17,379 indicated miles. 6 new tires. Excellent condition. \$11,000; 1924 Graham Brothers Ice Cream delivery truck. \$25,000 Pictures available on the Owls Head Transportation Museum Barn Fresh Website. Call Toby at 594-4418 for more information.

**Wanted-** A pair of MPG-Maine Potato Growers mudflaps Check those storage trailers in your back yard! Contact John Ellingwood 207-590-2298 or jellin@sacoriver.net

**Transportation** - At some point in the near (hopefully) future I may be hauling two White 9000's to the Sorrento area which is north of Ellsworth and south of Milbridge. This means I may have an empty trailer coming back south. If you have transportation needs in that direction maybe you can help me to justify this

**For Sale** 48 Napa Parts books...Years 1990 to 2004 Passenger car, light & heavy trucks and equipment. Books cover thermostats, exhaust, suspension, brake, air brake, oil seals, bearings, spark plugs, oil filters, drive line, engine and transmission mounts, belts and hoses. This includes the counter rack, that you see used in parts stores. Some of the books cover parts in the years 1950 - 1980 \$125.00  
Ed Gove 207-363-2293

**For Sale:** good running 261 straight 6 from a 1954 Chevy dump truck. \$300.00  
949-1360 Falmouth

1949 F5 Ford. Flathead 6. Marmon Herrington 4x4. Former fire truck. Currently has a nice wrecker body with no hoist. Truck is fairly clean. Runs and yard drives. Has about 25K miles as I recall. \$2800.00 949-1360 Falmouth

## PUT ON YOUR CALENDER

- February 15, '14 Pine Tree Chapter Winter Cruise** see Details below
- 
- March 16, '14 Pine Tree Chapter Membership Meeting,** Owls Head Transportation Museum. 9:30 Personal Museum tour by events coordinator Toby Stinson. 11:30 Lunch with the meeting taking place shortly afterwards. For more info contact John Ellingwood 207-590-2298
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- March 22-23, '14 Owls Head Transportation Museum** Midcoast Model Festival Contact Toby Stinson @ ts@ohm.org
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- May 3, '14 George Sprowl's Antique Express** Open House 9:00-4:00 @ 15 New England Rd Searsmont Me Contact George Sprowl @ 207-342-5818
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- May 17, '14 Pine Tree Chapter** Spring Stretch gathering @ Maine State Truck Driving Championships in Hampden, ME with trip to Cole Land Transportation Museum in the afternoon. Details in next newsletter, website and Facebook page
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- May 18, '14 Hillcrest Farm Antique Truck Meet** 741 River Rd., Windham, ME Contact Adam Libby @ 207-651-5769
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- July 6, '14 Boothbay Railway Village** Antique Engine & Tractor Meet • Operating early antique engines & tractors. Displays and demonstrations of early mechanical devices.
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- July 13, '14 Truck Show - Bolton Fair Grounds** New Location Route 117, Lancaster, MA A.T.C.A. New England Chapter, Bill Semple 978-460-0465
- 
- July 19-20, '14 Owls Head Transportation Museum,** Trucks, Tractors, Commercial Vehicles weekend
- 
- July 19-20, '14 Boothbay Railway Village** Antique Auto Days
- 
- August 6-8 '14 HCEA Annual Convention and Pageant of Steam,** Canandigua, NY

## Winter Cruise

Saturday Feb 15th 11 AM.

Meet at Pat's Pizza - 292 State St, Augusta

After lunch we'll take in the Maine State Museum

special admission rate \$2!

*Beat the mid winter blues with the Pine Tree Chapter!*

*Please RSVP if possible to Charlie Huntington 563-5824  
or badgoat@tidewater.net.*

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### **DUES NOTICE - Membership Renewal & Update Form**

Please sign me up for another years worth of membership in the Pine Tree Chapter, ATHS.  
Membership in the American Truck Historical Society is required.

Name \_\_\_\_\_ Date \_\_\_\_\_

Street \_\_\_\_\_ Phone ( ) \_\_\_\_\_

City \_\_\_\_\_ E-Mail \_\_\_\_\_

State \_\_\_\_\_

Zip \_\_\_\_\_

Pine Tree Chapter Dues of \$10.00 run from January to December. page 11

**Mail to: Pine Tree Chapter ATHS**

C/O Jamie Mason  
104 Falmouth Road  
Falmouth, Maine 04105

## **Your 2013-14 Chapter Officers and Directors:**

**President - John Ellingwood Jr.** P.O. Box 683 Waterboro, ME 04087; Home (207) 247-6795 Cell (207) 590-2298; email: jellin@sacoriver.net

**Vice President - Wayne Devoe Jr.** 56 Allendale Road Newport, VT 05855; (207) 318-0323; email: wdjr62@hotmail.com

**Secretary - Diane Munsey,** Rusty Fender Estates 785 River Road, Dresden, ME 04342; (207) 737-2997; email: munsandi@gmail.com

**Treasurer - Jamie Mason** 104 Falmouth Road, Falmouth, ME 04105; (207) 949-1360; email: haroldjmason@gmail.com

**Newsletter Editor - George Barrett** 2 Country Charm Rd. Cumberland, ME 04021; (207) 829-5134 cell 671-2666; email: sheepscoot@gwi.net

**Director - Peter Mullin** 200 Stanford Street, South Portland, ME; 04106 (207) 767-6080; email: wfd44@maine.rr.com

**Director - Charlie Huntington** 78 Lynch Rd. Newcastle, ME 04553; (207) 563-5824; email: badgoat@tidewater.net

**Director - Lars Ohman** 6 Antique Drive Sabattus, ME 04280; (207) 375-6515; email: peckapohl@roadrunner.com

**Director - Steve Marshall** 77 Murray Road Shapleigh, ME 04076; (207) 651-7115; email: srmcam86@gmail.com

**Director - Clayton Hoak** 299 East Stage Road, Pittston, ME 04345; (207) 582-3224; email: 1948reo@roadrunner.com

Pine Tree Chapter ATHS  
c/o George Barrett  
2 Country Charm Rd.  
Cumberland, ME 04021