



LAMPTON-LOVE, INC.

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Date: February 2, 2009
To: All Branch Managers
From: Gene Maddox
Subject: Branch Office Monthly Safety Meeting – February 2009

Company policy requires that each branch office hold a minimum of one safety meeting each month with the documentation of the material covered and the attendance being recorded on the “Monthly Safety Meeting Minutes and Attendance Record” (see attached form). **Please detach this form, fill out and mail or fax a copy to Polly Cox. Please keep the original for your records.**

Note: ONLY the Monthly Safety Meeting Minutes and Attendance Record is to be sent in.

To assist you in complying with this requirement, the following subjects are for your Monthly Safety Meeting, for the month of February 2009. You may add topics, **but please document the following topics:**

1. News Briefs!!! (2 pages)
2. LP Gas (Vapor) Pipe Sizing (4 pages)

It is recommended that you thoroughly read this material prior to your meeting.

It is strongly recommended that you use the 3-ring binder to store all of your “2009 Monthly Safety Meetings”!!! This material may be referred to or used to train new employees. This manual should be kept in an area of the office that is easily accessible to all employees.

Be Smart.... Be Safe and Be Courteous!!!

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PROPANE
EXCEPTIONAL ENERGY

NEWS BRIEFS!!!

(This monthly “column” will include short newsworthy topics, which will serve as a friendly reminder to us all)

Answering the Phone – Professionally

First impressions are very important. Callers begin to form their impression of an organization, and its employees, by:

- The number of rings it takes to get an answer.
- The first voice they hear.

Whether the voice is live or part of voicemail it needs to help create a favorable impression. Imagine a cheerful “Good Morning, Lampton-Love, Mike Johnson, how may I help you?” versus a harsh, clipped “Lampton-Love, please hold.”

The rules for answering a telephone are simple but they need to be reviewed and practiced continually. The following are the most basic ones, which should **always** be employed:

1. Use the four answering courtesies.
2. Be enthusiastic when you answer.
3. Use friendly phrases as part of your greeting.
4. Remember to smile as you pick up the receiver.

1. Use the four answering courtesies:

- Greet the caller.
- State your organization (ie. – Lampton-Love, Allgas, LacoX, etc.)
- Introduce yourself. (At the least, your first name is a must!!!)
- Offer your help.

Example: “Good Morning, LacoX, Joan speaking. How may I help you?”

Think about it; the above greeting: politely greets the caller, it confirms the fact that they have reached the correct number that they dialed, they now know exactly who they are about to speak with and they now know you are willing to be of service to them!!!

A common objection to the use of the four answering courtesies is the time it takes. But, after all, it only takes about 2 to 3 seconds. Try it; time yourself. Remember, you are the one that first speaks; therefore you are attempting to positively set the tone of the conversation. The customer’s perception of you and our company begins with how you answer the telephone.

2. Be enthusiastic when you answer.

Help make the calling party feel truly welcome. A tired voice lacking in enthusiasm is unappealing, and can quickly and easily be unintentional communicated by your tone of voice. No one wants to ask for help from a “grumpy, grouchy” person!!!

3. Use friendly phrases as part of your greeting.

Example: “Thank you for calling.”
 “How may I help you?”
 “How are you today?”

4. Remember to smile as you pick up the receiver.

You never know who is on the other end of the line, until you answer and speak first. Remember, you are the first one to make the first impression. Again, you are the first one to positively impact the rest of the phone conversation.

FEBRUARY 2009 SAFETY MEETING

LP Gas (Vapor) Pipe Sizing

Before we install a new gas piping system in a home, we all need to understand that there are 3 things that must be considered in order for us to have a safe and efficient system that will supply the needed propane to all appliances, at the required working pressures. The three considerations are as followed.

1. We must make sure that the gas tank is sized properly for the BTU load.
2. The regulators are sized and adjusted properly for the BTU load.
3. And that the gas piping is sized properly for the entire BTU load

With the larger homes that we are piping today and the number of the new more efficient appliances that are being connected to these systems, along with gas generators at some locations we just can not use the old rule of thumb in sizing. It's a must that we take time and properly size the gas supply system in order to eliminate possible problems down the road. It's also a good idea to over size the system a little in order to take care of equipment that could be added later.

In the last few months some branches have run into some undersized piping and they tried to compensate by increasing the regulator pressures. This just simply does not work if the piping is too small, regardless of the pressure setting you have to have the gas volume there to supply the BTU demand.

Below are instructions to help with pipe sizing. These instructions are taken from the "Rego Serviceman Handbook". You can also find sizing information in Chapter 6 of NFPA 54 code book and Chapter 15 in NFPA 58 has sizing charts.

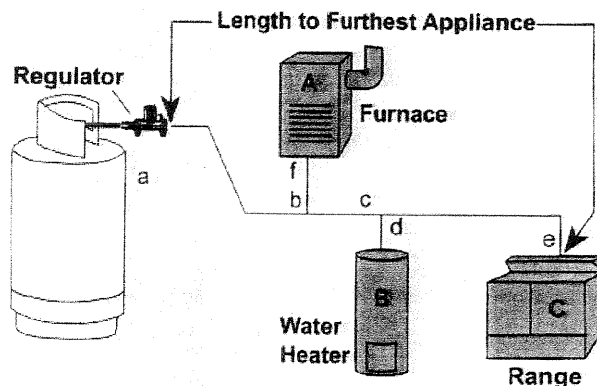
If I can ever be of help with determining correct pipe, regulator or tank sizing please call or email me.

Pipe and Tubing Selection Guide

Use the following simple method to assure the selection of the correct sizes of piping and tubing for LP-Gas vapor systems: Piping between first and second stage regulators is considered, as well as low pressure (inches water column) piping between second stage, single stage, or integral twin stage regulators and appliances.

Instructions:

1. Determine the total gas demand for the system by adding up the BTU/hr input from the appliance nameplates and adding demand as appropriate for future appliances.
2. For second stage or integral twin stage piping:
 - A. Measure length of piping required from outlet of regulator to the appliance furthest away. *No other length is necessary to do the sizing.*
 - B. Make a simple sketch of the piping, as shown.
 - C. Determine the capacity to be handled by each section of piping. For example, the capacity of the line between a and b must handle the total demand of appliances A, B, and C; the capacity of the line from c to d must handle only appliance B, etc.
 - D. Using Table 3 select proper size of tubing or pipe for each section of piping, using values in BTU/hr for the length determined from step #2-A. If exact length is not on chart, use next longer length. Do not use any other length for this purpose! Simply select the size that shows at least as much capacity as needed for each piping section.
3. For piping between first and second stage regulators
 - A. For a simple system with only one second stage regulator, merely measure length of piping required between outlet of first stage regulator and inlet of second stage regulator. Select piping or tubing required from Table 1.
 - B. For systems with multiple second stage regulators, measure length of piping required to reach the second stage regulator that is furthest away. Make a simple sketch, and size each leg of piping using Table 1, 2, or 3 using values shown in column corresponding to the length as measured above, same as when handling second stage piping.



Example 1

Determine the sizes of piping or tubing required for the twin-stage LP-Gas installation shown.

Total piping length = 84 feet (use Table 3 @ 90 feet)

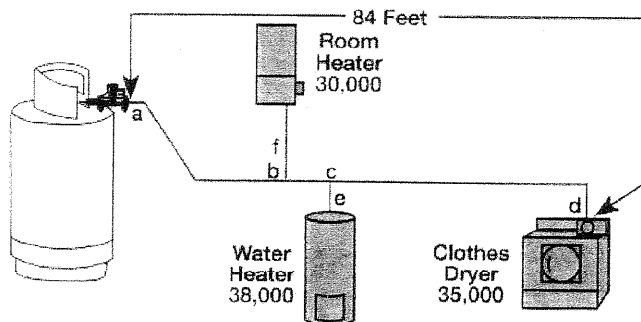
From a to b, demand = 38,000 + 35,000 + 30,000
= 103,000 BTU/hr; use 3/4" pipe

From b to c, demand = 38,000 + 35,000
= 73,000 BTU/hr; use 1/2" pipe or 3/4" tubing

From c to d, demand = 35,000 BTU/hr; use 1/2" pipe or 5/8" tubing

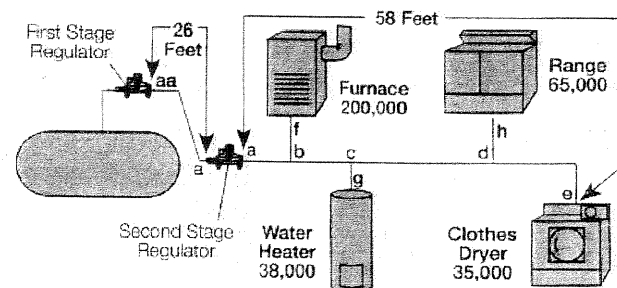
From c to e, demand = 38,000 BTU/hr; use 1/2" pipe or 5/8" tubing

From b to f, demand = 30,000 BTU/hr; use 1/2" pipe or 1/2" tubing



Example 2.

Determine the sizes of piping or tubing required for the two-stage LP-Gas installation shown.



Total first stage piping length = 26 feet; first stage regulator setting is 10psig (use Table 1 or 2 @ 30 feet)

From aa to a, demand = 338,000 BTU/hr; use 1/2" pipe, 1/2" tubing, or 1/2" T plastic pipe.

Total second stage piping length = 58 feet (use Table 3 @ 60 feet)

From a to b, demand = 338,000 BTU/hr; use 1" pipe

From b to c, demand = 138,000 BTU/hr; use 3/4" pipe or 7/8" tubing

From c to d, demand = 100,000 BTU/hr; use 1/2" pipe or 3/4" tubing

From d to e, demand = 35,000 BTU/hr; use 1/2" pipe or 1/2" tubing

From b to f, demand = 200,000 BTU/hr; use 3/4" pipe or 7/8" tubing

From c to g, demand = 38,000 BTU/hr; use 1/2" pipe or 1/2" tubing

From d to h, demand = 65,000 BTU/hr; use 1/2" pipe or 5/8" tubing

Pipe and Tubing Selection Guide

Example 3

Determine the sizes of piping or tubing required for the 2 PSI LP-Gas installation shown.

Total first stage piping length = 26 feet; first stage regulator setting is 10psig (use Table 1 or 2 @ 30 feet)

Total 2 PSI Piping Length = 19 ft. (use Table 4 @ 20 ft. or Table 6 @ 20 ft.)

From aa to a, demand= 338,000 BTU

use 3/8" CSST or 1/2" copper tubing or 1/2" pipe

From Regulator a to each appliance:

From a to b, demand= 65,000 BTU; length = 25 ft. (Table 5),

use 1/2" CSST

From a to c, demand= 200,000 BTU; length = 30 ft. (Table 5)

use 3/4" CSST

From a to d, demand= 38,000 BTU; length = 21 ft.* (Table 5)

use 3/8" CSST *use 25 ft. column

From a to e, demand= 35,000 BTU; length = 40 ft. (Table 5)

use 1/2" CSST

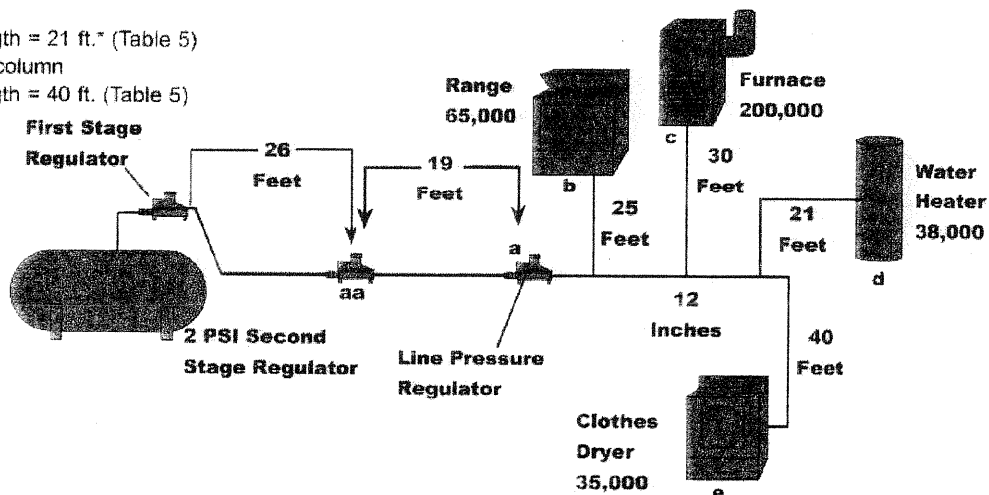


Table 1 – First Stage Pipe Sizing (Between First and Second Stage Regulators) 10 PSIG Inlet with a 1 PSIG Pressure Drop Maximum capacity of pipe or tubing, in thousands of BTU/hr or LP-Gas

Size of Pipe or Copper Tubing, Inches		Length of Pipe or Tubing, Feet																			
		10	20	30	40	50	60	70	80	90	100	125	150	175	200	225	250	275	300	350	400
Copper Tubing (O.D.)	3/8"	558	383	309	265	235	213	196	182	171	161	142	130	118	111	104	90	89	89	82	76
	1/2"	1387	870	700	599	531	481	443	412	386	365	323	293	269	251	235	222	211	201	185	172
	5/8"	2360	1622	1303	1115	988	896	824	767	719	679	601	546	502	467	438	414	393	375	345	321
	3/4"	3993	2475	2205	1887	1672	1515	1394	1297	1217	1149	1018	923	843	790	740	700	664	634	584	543
	1/2"	3339	2295	1843	1577	1398	1267	1165	1084	1017	961	852	772	710	660	619	585	556	530	488	454
	3/4"	6982	4799	3854	3298	2923	2649	2437	2267	2127	2009	1780	1613	1484	1381	1296	1224	1162	1109	1020	949
	1"	13153	9040	7259	6231	5507	4989	4590	4270	4007	3785	3354	3039	2796	2601	2441	2305	2190	2089	1922	1788
	1 1/4"	27004	18560	14904	12756	11306	10244	9424	8767	8226	7770	6887	6240	5741	5340	5011	4733	4495	4289	3945	3670
Pipe Size	1 1/2"	40461	27809	22331	19113	16939	15348	14120	13136	12325	11642	10318	9349	8601	8002	7508	7092	6735	6426	5911	5499
	2"	77924	53556	43008	36809	32623	29559	27194	25299	23737	22422	19871	18005	16564	15410	14459	13658	12971	12375	11385	10591

* Total length of piping from outlet of first stage regulator to inlet of second stage regulator (or to inlet of second stage regulator furthest away).

Notes: 1) To allow 2 PSIG pressure drop, multiply total gas demand by .07, and use capacities from table. 2) For different first stage pressures, multiply total gas demand by the following factors, and use capacities from table. Ex: 1,000,000 BTU load at 5 PSI: 1,000,000 (1.12) = 1,200,000 BTU then use chart bases on 1,200,000 BTU

First Stage Pressure PSIG Multiply By

20	.844
15	.912
5	1.120

Data Calculated per NFPA #54 & 58

Table 2 – First Stage Plastic Tubing Sizing 10 PSIG Inlet with a 1 PSIG Pressure Drop

Maximum capacity of plastic tubing in thousands of BTU/hr of LP-Gas

Size of Plastic Tubing		Length of Tubing, Feet*																			
NPS	SDR	10	20	30	40	50	60	70	80	90	100	125	150	175	200	225	250	275	300	350	400
1/2T	7.00	1387	954	766	655	581	526	484	450	423	399	354	321	295	274	257	243	231	220	203	189
3/4	9.33	3901	2681	2153	1843	1633	1480	1361	1267	1188	1122	995	901	829	772	724	684	649	620	570	530
1	11.00	7811	5369	4311	3690	3270	2963	2726	2536	2379	2248	1992	1805	1660	1545	1499	1369	1300	1241	1141	1062
1T	11.50	9510	6536	5249	4492	3981	3607	3319	3088	2897	2736	2425	2197	2022	1881	1765	1667	1583	1510	1389	1293
1T	12.50	10002	6874	5520	4725	4187	3794	3490	3247	3046	2878	2551	2311	2126	1978	1856	1753	1665	1588	1461	1359
1	11.00	14094	9687	7779	6658	5901	5346	4919	4578	4293	4055	3594	3257	2996	2787	2615	2470	2346	2238	2059	1916
1 1/4	10.00	24416	16781	13476	11534	10222	9262	8521	7927	7438	7026	6226	5642	5190	4829	4531	4280	4064	3878	3567	3318
2	11.00	66251	45534	36566	31295	27737	25131	23120	21509	20181	19063	16895	15308	14084	13102	12293	11612	11028	10521	9680	9005

* Total length of piping from outlet of first stage regulator to inlet of second stage regulator or to inlet of second stage regulator furthest away.

First Stage Pressure PSIG Multiply By

20	.844
15	.912
5	1.120

Data Calculated per NFPA #54 & 58

Pipe and Tubing Selection Guide

Table 3 – Second Stage or Integral Twin Stage Pipe Sizing 11 Inches Water Column Inlet with a 1/2 Inch Water Column Drop. Maximum capacity of pipe or tubing in thousands of BTU/hr of LP-Gas

Size of Pipe or Copper		Length of Pipe or Tubing, Feet																			
Tubing, Inches		10	20	30	40	50	60	70	80	90	100	125	150	175	200	225	250	275	300	350	400
Copper Tubing (O.D.)	3/8"	49	34	27	23	20	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1/2"	110	76	61	52	46	42	38	36	33	32	-	-	-	-	-	-	-	-	-	-
	5/8"	205	151	114	97	86	78	71	67	62	59	-	-	-	-	-	-	-	-	-	-
	3/4"	348	239	192	164	146	132	120	113	105	100	-	-	-	-	-	-	-	-	-	-
	7/8"	536	368	296	253	224	203	185	174	161	154	-	-	-	-	-	-	-	-	-	-
	1 1/2"	291	200	161	137	122	110	102	94	87	84	74	67	62	58	54	51	48	46	43	40
Pipe Size	3/4"	608	418	336	287	255	231	212	198	185	175	155	141	129	120	113	107	101	97	89	83
	1"	1146	788	632	541	480	435	400	372	349	330	292	265	244	227	213	201	191	182	167	156
	1 1/4"	2353	1617	1299	1111	985	892	821	764	717	677	600	544	500	465	437	412	392	347	344	320
	1 1/2"	3525	2423	1946	1665	1476	1337	1230	1144	1074	1014	899	815	749	697	654	618	587	560	515	479
	2"	6789	4666	3747	3207	2842	2575	2369	2204	2068	1954	1731	1569	1443	1343	1260	1190	1130	1078	992	923

* Total length of piping from outlet of regulator to appliance furthest away.

Data Calculated per NFPA 954 & 58.

Table 4-Maximum Capacity of CSST in Thousands of BTU per hour of undiluted LP-Gases Pressure of 2 psi and a pressure drop of 1 psi (Based on a 1.52 Specific Gravity Gas)*

EHD** Flow Designation		Length of Pipe or Tubing, Feet													
		10	20	30	40	50	75	80	110	150	200	250	300	400	500
3/8"	13	426	262	238	203	181	147	140	124	101	86	77	69	60	53
	15	558	347	316	271	243	196	189	169	137	118	105	96	82	72
1/2"	18	927	591	540	469	420	344	333	298	245	213	191	173	151	135
	19	1106	701	640	554	496	406	393	350	287	248	222	203	175	158
3/4"	23	1735	1120	1027	896	806	663	643	578	477	415	373	343	298	268
	25	2168	1384	1266	1100	986	809	768	703	575	501	448	411	355	319
1"	30	4097	2560	2331	2012	1794	1457	1410	1256	1021	880	785	716	616	550
	31	4720	2954	2692	2323	2072	1685	1629	1454	1182	1019	910	829	716	638

Table does not include effect of pressure drop across the wire regulator. If regulator loss exceeds 1/2 psi (based on 13 in. water column outlet pressure), DO NOT USE THIS TABLE. Consult with regulator manufacturer for pressure drops and capacity factors. Pressure drops across a regulator may vary with flow rate.

CAUTION: Capacities shown in table may exceed maximum capacity for a selected regulator. Consult with regulator or tubing manufacturer for guidance.

*Table includes losses for four 90-degree bends and two end fittings. Tubing runs with larger number of bends and/or fittings shall be increased by an equivalent length of tubing according to the following equation: $L = 1.3n$ where L is additional length (ft) of tubing and n is the number of additional fittings and/or bends.

**EHD — Equivalent Hydraulic Diameter — A measure of the relative hydraulic efficiency between different tubing sizes. The greater the value of EHD, the greater the gas capacity of the tubing.

Table 5-Maximum Capacity of CSST in Thousands of BTU per hour of undiluted LP-Gases Pressure of 11 inch Water Column and a Pressure Drop of 0.5 Inch Water Column: (Based on a 1.52 Specific Gravity Gas)*

EHD** Flow Designation		Length of Pipe or Tubing, Feet																
		5	10	15	20	25	30	40	50	60	70	80	90	100	150	200	250	300
3/8"	13	72	50	39	34	30	28	23	20	19	17	15	15	14	11	9	8	8
	15	99	69	55	49	42	39	33	30	26	25	23	22	20	15	14	12	11
1/2"	18	181	129	104	91	82	74	64	58	53	49	45	44	41	31	28	25	23
	19	211	150	121	106	94	87	74	66	60	57	52	50	47	36	33	30	26
3/4"	23	355	254	208	183	164	151	131	118	107	99	94	90	85	66	60	53	50
	25	426	303	248	216	192	177	153	137	126	117	109	102	98	75	69	61	57
1"	30	744	521	422	365	325	297	256	227	207	191	178	169	159	123	112	99	90
	31	863	605	490	425	379	344	297	265	241	222	208	197	186	143	129	117	107

*Table includes losses for four 90-degree bends and two end fittings. Tubing runs with larger number of bends and/or fittings shall be increased by an equivalent length of tubing according to the following equation: $L = 1.3n$ where L is additional length (ft) of tubing and n is the number of additional fittings and/or bends.

**EHD — Equivalent Hydraulic Diameter — A measure of the relative hydraulic efficiency between different tubing sizes. The greater the value of EHD, the greater the gas capacity of the tubing.

Table 6 – Copper Tube Sizing or Schedule 40 Pipe Sizing* in Thousands of BTU per hour of undiluted LP-Gases 2 PSIG Inlet with a 1PSIG pressure drop (between 2 PSIG service regulator & line pressure regulator)

Size of Pipe or Copper Tubing, Inches		Length of Pipe or Tubing, Feet																			
		10	20	30	40	50	60	70	80	90	100	150	200	250	300	350	400	450	500	600	700
Copper Tubing (O.D.)	3/8"	451	310	249	213	189	171	157	146	137	130	104	89	79	72	66	61	58	54	49	45
	1/2"	1020	701	563	482	427	387	356	331	311	294	236	202	179	162	149	139	130	123	111	102
	5/8"	1900	1306	1049	898	795	721	663	617	579	547	439	376	333	302	278	258	242	229	207	191
	3/4"	3215	2210	1774	1519	1346	1219	1122	1044	979	925	743	636	563	511	470	437	410	387	351	323
	1 1/2"	2687	1847	1483	1269	1125	1019	938	872	819	773	621	531	471	427	393	365	343	324	293	270
	3/4"	5619	3862	3101	2654	2352	2131	1961	1824	1712	1617	1298	1111	985	892	821	764	717	677	613	564
	1"	10685	7275	5842	5000	4431	4015	3694	3436	3224	3046	2446	2093	1855	1681	1546	1439	1350	1275	1155	1063
	1 1/4"	21731	14936	11994	10265	9098	8243	7584	7055	6620	6253	5021	4298	3809	3451	3175	2954	2771	2618	2372	2182
	1 1/2"	32560	22378	17971	15381	13632	12351	11363	10571	9918	9369	7524	6439	5707	5171	4757	4426	4152	3922	3554	3270
	2"	62708	43099	34610	29621	26253	23787	21884	20359	19102	18043	14490	12401	10991	9959	9162	8523	7997	7554	6844	6297

FEBRUARY 2009
MONTHLY SAFETY MEETING
MINUTES & ATTENDANCE RECORD

Company Name: _____

City: _____ **State:** _____

Date: _____ **Time Started:** _____ **Time Finished:** _____

Instructed By: _____ **Number Attending:** _____

Subject Covered and Comments:

By my signature below, I certify that I attended and participated in this Safety Meeting and I understand the material presented.

Employee Name (Please print)	Employee Signature	License Expires*	Endorsements**	DOT Physical Expires***
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				

* List driver's license expiration date in this column.

** Check licenses for proper endorsements and re-testing. (For example: "HazMat") List endorsements in this column.

*** List DOT physical expiration date in this column.

By my signature below, I hereby certify that the employees listed above have been trained in accordance with the applicable regulations and curriculum for this monthly safety meeting.

Instructor's Signature: _____ **Date:** _____

Mail or fax this sheet only to: Lampton-Love Inc.
Gene Maddox/Polly Cox
P.O. Box 1607
Jackson, MS. 39215-1607
Fax #: 601-933-3420