



Manufactured Home Update

Oregon Department of Consumer & Business Services ■ Building Codes Division

July 2007

Manufactured Update going electronic

By Albert Endres

In the last edition of the "Manufactured Home Update," I asked for your opinion on whether the publication should be on hard copy, electronic, or both. Although slightly more of you said you prefer a hard copy, we have decided to stop printing it.

Going electronic is the best economic decision, considering the costs of production and mailing and our current budget. The production dates of the publication will stay the same: about the middle of January, April, July, and October. But instead of receiving a printed copy, you can go to www.bcd.oregon.gov, click on publications, and then click on "Manufactured Home Update." You can also sign up for the Building Codes Division's automatic notification program. You will then receive an e-mail when the new publication comes out. To sign up, go to our Web site, www.bcd.oregon.gov, and click on "E-mail notification" and follow the instructions.

If you do not have access to the Internet and need a hard copy of the newsletter mailed to you, call (503) 373-1257. Please leave your name, license number, and a message so we can get an accurate count of how many may still need to be mailed. Any future mailings will depend on the number of responses we receive.

For all you faithful readers who have enjoyed and probably saved the hard copy over the years, I am sorry we need to go electronic. I hope you will sign up for notification or remember to check in quarterly for the latest news. ■

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HUD label verification & data sheets

By Tom Nicolai

In the past few years, with interest rates reaching all-time lows, numerous people have either sold or refinanced their manufactured homes. Now, as the interest rates are slowly increasing, even more people are rushing to sell or refinance. In either case, one of the major requirements that most banks and finance

companies need is proof that the manufactured home was built to U.S. Housing and Urban Development (HUD) standards. The HUD label numbers assigned to the home verify this. If you are attempting to finance through FHA or Fannie Mae, this is a must.

Continued on Page 2

HUD label verification & data sheets, *continued from Page 1*

Every day, we receive phone calls and e-mails from homeowners, appraisers, real estate agents, and financial institutions looking for the HUD numbers assigned to a specific home to verify the home was built to the HUD code. These labels are located on the exterior end walls of the home, one label on each section. Frequently these labels cannot be located because the home has been painted, the siding has been replaced or covered up, and the HUD labels have been removed, lost, or covered up. Another place to find the HUD numbers is on the home's data sheet. This sheet is installed in the home by the manufacturer and lists the serial and model number, date it was built, the HUD label numbers, and various other information pertaining to the home. The data sheet can usually be located under the kitchen sink area, the utility room cabinet, or bedroom closet.

If all efforts fail to locate the HUD labels or the data sheet, you can contact the Building Codes Division to obtain this information for homes produced in Oregon. Before you call you should gather any and all information you have concerning the home including the manufacturer's name, the year it was built, and the serial number. This will help us locate the HUD label numbers assigned to the home. In some cases you may have the HUD numbers and

are looking for a serial number and manufacturer's name. We can provide that as well for Oregon-produced homes.

To obtain either the HUD numbers or serial number verifying the HUD information, contact Tom Nicolai at the Building Codes Division by phone, (503) 373-7243, or e-mail, Tom.E.Nicolai@state.or.us. We will verbally provide you with the HUD numbers that were originally affixed to the home. Remember, HUD has indicated that under no circumstances will replacement labels be reissued or installed on the home.

Some lending institutions are requesting copies of the home's data sheets. In most cases this is not necessary, but some feel it is a requirement and want a copy. The Building Codes Division stores data sheets at an off-site warehouse. Over the years much of this information has been lost in frequent moves or mistakenly discarded by movers, which means that a lot of the data sheets are not there. Subsequently, to search for this information requires a \$55 fee, paid in advance, with no guarantee the information will be there. We do not make this journey daily so you may need to wait a few days. Keep this in mind if you call to request a copy of a data sheet. For information please contact Tom Nicolai at the Building Codes Division by phone, (503) 373-7243, or e-mail, Tom.E.Nicolai@state.or.us. ■

Water heater drain pan and piping

By Albert Endres

An article in the January 2007 edition addressed a HUD standard change that now requires water heaters to have drain pans installed on homes produced on or after May 30, 2006. To read this article again, you can go to our Web site at www.bcd.oregon.gov/pub/manfupdate.html and scroll to January 2007. The article covered the new code and guidance on what to do for replacement water heaters.

What this article did not cover is the possibility that the drain piping may not be fully installed at the factory. When a factory cannot complete the

drain line to the outside building line, the installer is responsible for completing the installation. The factory is required to supply the piping in order to do this.

Do not confuse the drain pan piping with the pressure/temperature overflow piping. The pressure/temperature overflow piping is to remain discharging under the home per HUD Standard 32809.609(c)(iii).

Please contact me at (503) 378-5975 or Albert.G.Endres@state.or.us if you have any questions. ■

Common roof issues found on alternate construction homes

By Dwight West

Since HUD issued a letter in early April regarding hinged roofs, and the installation of roof caps, which finish the peak, has increased the number of homes that require on-site roof inspections, we are still seeing numerous noncompliant installations of roof components.

Metal roof vents: Some of the manufacturers require metal roof vents to be installed for the exhaust of the bath fans, kitchen range hood fans, or for the high roof vents. You must embed vents (bottom side of flanges) in asphalt cement to the roof shingles. When the shingles are installed on top of the side and top flanges, they also must be embedded in asphalt cement. What we see quite often is contractors not sealing the vents to the roof or installing a ¼-inch bead of asphalt cement to the bottom of the vent. This does not make a good watertight seal to the shingles. They also forget that the shingles need to be sealed to the top of the vent flanges.

Ridge vents: The majority of the manufacturers are now requiring their roofs to have the high venting come from site-installed ridge vents. The manufacturers are required to provide installation instructions with each home. Installers need to ensure that they follow the instructions. The most common installation failure is installing the ridge vent without caulking. Before securing the ridge vent to roof decking, you must install a bead of caulk the full length of the vent along both sides of vent. When two pieces of ridge vent are joined end to end, they are to be tightly fitted together and caulked after securement. Install caps shingles directly to the vent. Make sure nails are of sufficient length (2-inch min); the nail line is inscribed on the top of the vent to serve as a guide. Make sure that the first and last cap shingle installed on the ridge vent is caulked to ensure proper connection to the ridge vent and allowed to extend past the end to the vent approximately 1/8 inch.

Shingle installation: Alternate construction homes are one of the few types of homes in which the installation of the shingles is inspected in the field. We continue to see contractors fail to install the shingles to the manufacturer's installation instructions. For vent pipes and other roof jack flashings, shingles are to be installed up to the vent pipe. Then a hole needs to be cut in the shingle to go over the pipe. This shingle needs to be set in asphalt cement. Then install the flashing and resume applying the shingles. Cut shingles in successive courses to fit around the pipe and embed them in asphalt cement where they overlap the pipe. When completed, the lower part of the flange should be overlapping the lower shingles and the side and upper shingles should overlap the flange. Shingles should never completely cover any of the roof flashings.

Closed cut valleys: For proper flow of water over the trimmed shingle, always start applying the shingles on the roof plane that has the lower slope or lesser height. Extend the end shingle at least 12 inches onto the adjoining roof. Make sure that no fastener is installed within 6 inches of the valley centerline and place two fasteners at the end of each shingle crossing the valley. Make sure that shingles are trimmed 2 inches from the valley centerline, and make sure that each cut shingle is trimmed 1 inch on a 45-degree angle from the upper corner of each end shingle. This is to direct rainwater back into the valley. Then embed each end shingle in a 3-inch-wide strip of asphalt cement.

If there are any questions regarding the installation of shingles, roof vents, hinged roof caps, or any other installation concerning alternate construction homes, call Dwight West at (503) 378-2620. ■

Shingle installation review

By Dan Jones

It seems roof designs are different on every house. There is such a wide variety of dormers, pitches, hips, eaves, overhangs, openings, and roof loads. Some houses are A/C and require vents, flues, fans, flashing, shingles, and other items be completed on site. And so many different types of products seem to continually change. It is always important to review and understand the requirements to ensure product performance and homeowner safety.

Below are some tips in installing shingles. The items listed require typical types of installation, but some DAPIA-approved plans and manufacturer's instructions may have more requirements. Please check and verify the requirements of the specific items you may be installing or inspecting.

Underlayment

- Underlayment paper should be installed over the drip edge at eaves and over the drip edge along rakes.
- The two layers of underlayment paper must be cemented together from the edge of the eaves, up to a point 24 inches inside the inside wall of the living area.
- Some areas that may require more cement are tower type dormers, extended eaves, recessed walls, and porches
- Torn or damaged paper should be overlapped and cemented together.

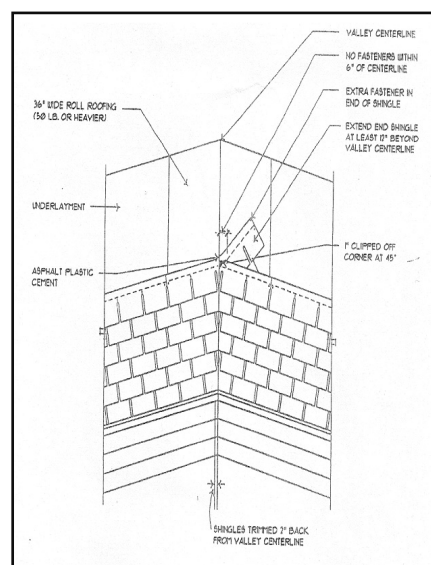
Shingles

- Joints between courses must be properly staggered. (Some 3-tab shingles may be a different length than architectural-type shingles. If using 3-tab as a starter course, joints may line up after courses).
- Make sure the starter course and first course are cemented together.
- Shingles must overhang the drip edge 1/4 inch to 3/8 inch.

- Fasteners should be installed flush, not cutting into shingles or under driven.
- Fasteners must be placed according to the manufacturer's installation instructions.
- Ensure staples are not exposed between butt joints of overlaying shingles (often seen between the starter and first course, and the cut shingles at the rake edges).

Valleys (closed cut)

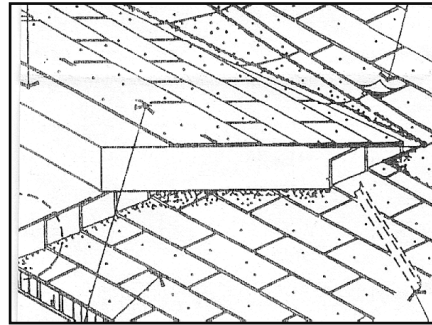
- Rolled roofing is centered in valley.
- Shingles should be extending 12 inches past the centerline of the valley, with extra nail in end of shingle.
- Shingle butt joints cannot be in valley.
- No fasteners can be located within 6 inches of the valley.
- Corner of upper shingle should be clipped 1 inch at 45 percent angle
- Shingles must be sealed down with a 3-inch-wide strip of cement
- Shingles must be cut back 2 inches away from valley centerline



Shingle installation review, *continued from Page 4*

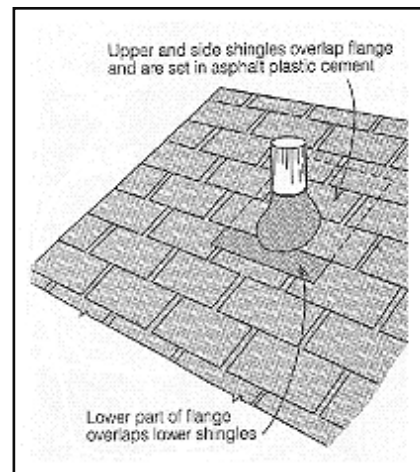
Tower type dormers

- Ensure underlayment paper is carried up the vertical wall.
- Check the correct size, securement, and cementing of step flashing.
- Flashing must be properly lapped, extended, and bent if needed at intersecting corners (front recessed walls to angle walls often need attention) to divert water away from the home.
- Make sure the underside of eave overhang is covered all the way to the main roof (not allow entry into roof cavity).



Vent flashing

- Cut a hole in the shingle to go over the pipe.
- Set the shingle in plastic asphalt cement.
- Set flashing in asphalt cement over pipe.
- Cut shingles to fit around pipe and set in plastic asphalt cement.
- Ensure the type of sealant used is compatible with the flashing, and apply an adequate amount (one little bead will not provide adequate coverage). ■



Tags becoming more critical in home sales

By Irene Lickiss

Lending institutions are getting stricter about secondary sets and the age of the homes. In fact they are starting to check the installer tags and verify if a home is in its primary location before they will approve a loan on a manufactured home. I am sure you can imagine the repercussions.

So even though you are doing a great job, I ask you to be especially careful when reporting the manufacturer and manufacturer's serial number. Tags that have been reported in years past are now becoming very critical to a homeowner's purchase or sale. The tags you are reporting now will be equally important in the future. Please do not make up either a manufacturer's name or serial number.

If you would like to see samples of the formats of the manufacturer's serial numbers and the portion we use, I can mail or fax them to you. There are other "helps" available as well. For the newer installers, the packet sent with your first order of tags includes all this information. You may reach me at (503) 373-1257, or fax me at (503) 378-4101. If you have any ideas or suggestions, I would appreciate your feedback. ■

BCD to update the Oregon Manufactured Dwelling and Park Code

By Albert Endres

The Building Codes Division started accepting code amendment proposals for the Manufactured Dwelling and Park Specialty Code on June 15. The current manufactured dwelling and parks code in Oregon is the 2002 edition of the Oregon Manufactured Dwelling and Park Specialty Code (MD&P). The division proposes to update the MD&P.

Timetable:

BCD will accept proposed code amendments until Aug. 1, 2007. No proposals will be accepted after Aug. 1.

Proposal process:

All proposals must be submitted to BCD in writing. The division has provided a form that includes the code amendment proposal criteria; the form is available at: <http://bcd.oregon.gov/pdf/2652.pdf>.

An established Code Review Committee will review the proposals. The committee will make recommendations concerning the adoption of proposed amendments to the Building Codes Division.

The committee meetings will be scheduled for August 2007.

The 2008 Oregon Manufactured Dwelling and Parks Specialty Code is scheduled to be effective April 1, 2008.

Contact:

If you have questions or need further information, please contact Albert Endres, Manufactured Dwelling and Parks Program chief, at Albert.G.Endres@state.or.us or (503) 378-5975. ■

Product and code requirement reminder

By Gary Hart

High-efficiency furnace

When possible, it would be helpful for the manufacturer to complete the installation of the ABS roof venting. This product has been designed to allow horizontal venting, which may occur in the roof cavity. We have identified venting that has not had the correct termination fittings installed for the combustion air intake pipe (90-degree elbow turned downward with correct roof clearance). On occasion the concealed piping in the roof cavity has been installed in a manner that makes it hard to determine which pipe is which. If possible, label or mark these pipes to prevent incorrect completion.

Water heater drip pan drains

Drip pan drains must extend to the outside perimeter of the home. This may require additional piping to be provided with the ship loose material.

Compatible adhesive must be supplied for the piping being used. The drains must be sloped away from the water heater and have a screen to prevent the entrance of vermin.

Product and design approval information

The manufacturer must include information and parts with the installation material for the items listed above. There has been a significant increase in the previous years for items that need to be completed during the installation of the home. The manufacturer is responsible for supplying the installer with any addendums from the DAPIA-approved design that is not accounted for in the installation manual. These addendums shall include details for each specific design. All of these requirements are necessary even if the home is not constructed as an "AC" (Alternate Construction) unit. ■

Quizzin' corner

By Irene Lickiss

It's time for another name game. I have picked out the names of 30 active installers completely at random. Is it you? Do you know someone by that name? Have you heard of any of these installers? Can you find them all? You can go right to left, left to right, bottom up, top down, horizontal, backward, and forward. Have fun! ■

B	Q	R	E	W	M	D	F	J	K	L	P	E	V	Y	O	U	N	G	A
Q	D	G	H	A	B	T	P	T	J	G	A	Q	Y	R	L	W	O	E	Z
E	M	Q	P	N	W	U	J	C	A	S	T	L	E	M	A	N	W	P	A
S	M	U	C	K	E	R	N	A	Q	P	O	R	S	M	D	L	A	P	G
A	B	C	D	E	F	T	B	Y	R	D	R	G	M	H	O	E	I	E	J
B	K	W	M	N	E	U	G	O	H	E	S	N	A	R	M	T	U	R	E
U	X	Z	L	Y	M	R	B	C	U	D	S	E	R	F	I	S	G	T	H
R	I	N	O	F	Z	I	N	G	E	R	M	E	J	K	N	U	L	M	N
T	O	O	R	P	Q	C	R	S	T	U	C	V	E	W	G	E	X	Y	Z
O	A	S	U	B	C	I	D	E	D	F	A	G	H	R	U	N	I	J	K
N	L	M	S	E	N	I	R	R	E	P	U	R	A	M	E	N	O	P	Q
R	S	A	S	T	U	V	A	W	X	Y	L	E	D	E	Z	M	A	T	Z
A	B	I	E	C	D	W	E	F	E	G	I	G	A	H	A	I	J	R	K
H	A	L	L	M	D	N	O	P	S	Q	F	N	M	R	N	S	T	E	U
V	W	L	L	O	X	Y	Z	A	A	B	F	I	S	C	D	E	F	N	G
H	I	I	O	J	K	L	M	N	H	O	E	M	P	Q	E	R	S	O	T
U	V	W	E	L	L	B	R	O	C	K	W	I	X	Y	C	Z	A	H	B
C	D	E	F	G	H	I	J	K	L	M	N	S	T	U	K	V	W	C	X
Y	K	I	V	S	D	I	E	Z	B	A	D	I	C	N	I	M	P	S	O
R	Q	T	S	U	I	W	O	M	Z	C	Y	E	L	L	A	L	V	R	P

ADAMS
ALLEY
ANKENY
BURTON
BYRD
CASTLEMAN

CHASE
DOMINGUEZ
EIDSVIK
EISIMINGER
GEPPERT
GUERRERO

HALL
HOGUE
LEDEZMA
MCAULIFFE
NEUSTEL
NOFZINGER

PERRINE
RAMSEY
REESER
RUSSELL
SCHONERT
SMUCKER

TURTURICI
WELLBROCK
WILLIAMSON
WOODWARD
YOUNG
ZANDECKI

Owners must protect homes in temporary storage _____

By Brian Lamb

The **Oregon Manufactured Dwelling Standard (OMDS)** adopted rules in April 1997 requiring perimeter blocking of homes being temporarily stored longer than 30 days. The Building Codes Division set up a monitoring program to inform manufacturers and dealers of the requirement and then to spot-check holding lots to ensure compliance.

Ten years later the document now known as the **Oregon Manufactured Dwelling and Park Specialty Code**, Chapter 3-1.2, retains the requirements for temporary storage of manufactured dwellings. If a manufacturer, dealer, or distributor places a home temporarily on display or in storage for a period of more than 30 days from the date of manufacture, the owner shall protect the home from deterioration according to the following:

- (a) Manufactured dwellings supported on their wheels and at the draw bar (hitch) shall be adequately supported under the perimeter of each floor section at 10 feet on center and under the marriage line at each column support post locations. Marriage line support post locations will be clearly marked by the manufacturer. Perimeter supports shall start not more than 5 feet from the end of the home and shall not be located under any window or door opening.
- (b) Manufactured dwellings not supported on their wheels and at the draw bar shall be adequately supported under each main frame (I-beam) and under the perimeter of the floor at 10 feet

on center and under the marriage line at each column support post location. Perimeter and mainframe support post shall start not more than 5 feet from the end of the home and shall not be located under any window or door opening.

- (c) Manufactured dwellings shall be sealed at the centerlines and at all other openings to prevent exposure to the elements
- (d) Manufactured dwellings occupied or intended to be occupied or manufactured dwellings on display in manufactured dwelling parks, mobile home parks, or manufactured dwelling subdivisions may not be installed temporarily but shall be installed to the complete setup requirements of Chapter 3.

The Building Codes Division no longer inspects holding lots on a regular basis; nevertheless, owners still need to ensure homes are blocked and the centerline close-up plastic is intact. Many problems the division's Consumer Assistance Section sees are directly traced to the storage of the homes.

Temporary blocking of homes is not always accomplished easily; transport yards may not want to have units blocked because homes are constantly being moved around the yard or dealers don't have people available to go to storage yards. But it is still a requirement, and, more so, a good practice to ensure the home's integrity and customer satisfaction. ■

BCD seeking members for code review committee _____

By Albert Endres

The Building Codes Division is forming a code review committee regarding the adoption of the 2008 Oregon Manufactured Dwelling and Parks Specialty Code. This committee will review code change submittals to the 2002 Oregon Manufactured Dwelling and Parks Specialty Code. The committee then will create a list of recommended code changes to be considered for approval.

If you are interested in participating, please send us the names of one to two people who can represent your organization on the code review committee. The committee will have seven to nine members, and we expect the group to meet approximately three to four times starting at the beginning of August 2007. Interested parties should contact Albert Endres before 5 p.m., July 13, 2007, at (503) 378-5975 or Albert.G.Endres@state.or.us. ■

Manufacturers may have special requirements for end-wall support

By Mark Campion

While inspecting a home in the field recently, I came across a puzzling situation. A large triplewide had all of the endwall outriggers removed to accommodate concrete cell-block skirting. I noticed that the floor framing was a bit “light” compared to what I normally expect to find on a foundation-ready floor design. Thinking that the outriggers should not have been removed, or, if they were supposed to be, then surely the floor framing would have been stouter, I contacted the manufacturer of the home.

It turns out the outriggers are only spot welded on and are meant to be knocked off to accommodate a poured stem wall or block skirting. The floor framing was complete and was not meant to be any stouter. However, the manufacturer of this floor design requires full-length, full-bearing support along all of the end walls.

The Specialty Code does not address this issue directly. The code talks about marriage line, perimeter (specifically the sidewall), and I-beam support, but is silent on support on the end walls except at the marriage line.

Manufacturers may have their own special requirements for support, and dealers, MDI installers, and LSI skirting contractors should familiarize themselves with the manufacturer’s installation manual and any addendums. In the situation I was inspecting, I had concerns that once the concrete cell-block skirting was in place, the home was not going to get full end-wall support. Since I was unfamiliar with the end-wall support requirements in this situation, I talked with the dealer to see if he was aware of the requirements. The dealer was also unaware, but after we talked, he was going to pass the information on to the skirting installer.

My advice to any manufacturer that has special installation requirements above and beyond the Specialty Code is to make these requirements known to your dealers and the dealer’s installers and LSIs. We also would be happy to publish any information you may wish to submit to the Manufactured Home Update, so local building inspectors may also be made aware of any unique requirements. ■

Quiz key

B	Q	R	E	W	M	D	F	J	K	L	P	E	V	Y	O	U	N	G	A
Q	D	G	H	A	B	T	P	T	J	G	A	Q	Y	R	L	W	O	E	Z
E	M	Q	P	N	W	U	J	C	A	S	T	L	E	M	A	N	W	P	A
S	M	U	C	K	E	R	N	A	Q	P	O	R	S	M	D	L	A	P	G
A	B	C	D	E	F	T	B	Y	R	D	R	G	M	H	O	E	I	E	J
B	K	W	M	N	E	U	G	O	H	E	S	N	A	R	M	T	U	R	E
U	X	Z	L	Y	M	R	B	C	U	D	S	E	R	F	I	S	G	T	H
R	I	N	O	F	Z	I	N	G	E	R	M	E	I	K	N	U	L	M	N
T	O	O	R	P	Q	C	R	S	T	U	C	V	E	W	G	E	X	Y	Z
O	A	S	U	B	C	I	D	E	D	F	A	G	H	R	U	N	I	J	K
N	L	M	S	E	N	I	R	R	E	P	U	R	A	M	E	N	O	P	Q
R	S	A	S	T	U	V	A	W	X	Y	L	E	D	E	Z	M	A	T	Z
A	B	I	E	C	D	W	E	F	E	G	I	G	A	H	A	I	J	R	K
H	A	L	L	M	D	N	O	P	S	Q	F	N	M	R	N	S	T	E	U
V	W	L	L	O	X	Y	Z	A	A	B	F	I	S	C	D	E	F	N	G
H	I	I	O	J	K	L	M	N	H	O	E	M	P	Q	E	R	S	O	T
U	V	W	E	L	L	B	R	O	C	K	W	I	X	Y	C	Z	A	H	B
C	D	E	F	G	H	I	J	K	L	M	N	S	T	U	K	V	W	C	X
Y	K	I	V	S	D	I	E	Z	B	A	D	I	C	N	I	M	P	S	O
R	Q	T	S	U	I	W	O	M	Z	C	Y	E	L	L	A	L	V	R	P

RV Corner: VIN tracks RVs, park trailers

By Brian Lamb

Recreational vehicles, including park trailers, are tracked by the Motor Vehicles Department of ODOT by means of their vehicle identification (VIN) numbers. VINs consist of a 17-character number/letter combination assigned by the manufacturer of the RV or the motor home's chassis.

Manufacturers of the vehicles are required to apply VINs if the vehicles are to be offered for resale or used by the manufacturer for commercial use. A VIN is not required on vehicles the owners have built themselves for their personal use; however, some kind of serial number may be required to register such a vehicle with the DMV.

Truck campers are not on their own axles, so they don't require VINs.

At VIN looks like a jumbled mess, but each character has a meaning.

The elements of the VIN

To start with, the first three characters are assigned by the Society of Automotive Engineers and are known as the world manufacturer identifier. Call SAE, (724) 776-4841, extension 8511, for your vehicle's WMI.

The rest of the characters are assigned by the manufacturer. The fourth one represents the type of recreational vehicle — a park model, a fifth-wheel, or a travel trailer.

The fifth character tells whether it's a high, medium or low type of vehicle.

The sixth and seventh characters of the VIN identify the unit's length.

The eighth character represents the number of axles.

The ninth is what we call a "check digit," which is determined after all of the other 16 slots have been assigned, so for now the number is 0.

The 10th slot tells what year the unit was manufactured.

The 11th is the plant at which the unit was built.

The 12th character tells whether the unit is single width or multi-sectioned.

VEHICLE IDENTIFICATION NUMBER

VEHICLE TYPE: TRAILER

SECTION	1			2				3	4								
SECTION TITLE	WORLD MANUFACTURER IDENTIFIER (WMI)			VEHICLE DESCRIPTOR SECTION				CHECK DIGIT	MODEL YEAR	PLANT	SEQUENTIAL PRODUCTION NUMBER						
CHARACTER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	4	6	N														

Manufacturer Identifier From SAE

P - PARK MODEL
 R - RV TRAILER
 S - FIFTH WHEEL

SERIES SPECIAL
 A - LOW
 B - MEDIUM
 C - HIGH

LENGTH IN FEET

NUMBER OF AXLES

0 FOR SINGLE WIDE

6 LOWER BUCKEYE

MODEL YEAR

CHECK DIGIT CALCULATIONS

CHARACTER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
ACTUAL VIN																	
CONVERTED VALUES (from TABLE A below)																	
MULTIPLIER (X)	8	7	6	5	4	3	2	10	0	9	8	7	6	5	4	3	2
PRODUCT (Value x multiplier)																	
	= SUM OF PRODUCTS																

SUM OF PRODUCTS = WHOLE NUMBER DECIMAL <=>

ALPHABETIC TO NUMERIC CONVERSION VALUES

A	1	G	7	N	5	V	5
B	2	H	8	P	7	W	6
C	3	J	1	R	9	X	7
D	4	K	2	S	2	Y	8
E	5	L	3	T	3	Z	9
F	6	M	4	U	4		

NOTE: Numerical characters from actual VIN are used in check digit calculation, alphabetical characters are converted to numerical, according to TABLE A VALUES.

TABLE B

IF DECIMAL IS	CHECK DIGIT IS	IF DECIMAL IS	CHECK DIGIT IS
09	= 1	54	= 6
18	= 2	63	= 7
27	= 3	72	= 8
36	= 4	81	= 9
45	= 5	90	= X
		00	= 0

You can calculate the vehicle identification number using a worksheet available from SAE.

The 13th through the 17th characters are five-digit sequential production numbers.

Figuring the VIN

To finish the VIN, you'd need a VIN calculation sheet from SAE. When you filled in all of the 17 characters (the "check digit" being 0 at this point) you'd go to the "check digit" calculation table. Each of your VIN slots will be a number or letter. If it's a letter, convert it to a number from the alphabetic to numeric conversion chart.

By now, the VIN looks something like this: 46NPB203056012345.

Shipping loose items becoming more common

By Kurt Pugh

There have been many changes in our industry in the past several years. To meet our customers' needs, more and more items are being shipped loose. I would like to review some of these items and highlight some of the installation requirements.

Porch lights

Porch lights are a common item. The junction box needs to be flush with the material it is installed on with no gaps between the box and the siding. If it is installed on a combustible material, there needs to be a flash ring. This protects the area between the fixture box and the fixture. The flash ring is a white fiberglass material. Sheet rock can also be used. Cementous siding does not require a flash ring. The power connections are pretty standard: white to white and black to black. The ground needs a little more attention. Most lights will have a metal bar on the outside that the fixture mounts to. There should be a ground screw on the bar. The home's ground needs to be attached to this screw and then connected to the fixture ground. Remember, all connections need to be made by a listed connector, i.e., wire nuts.

Chandeliers

Chandeliers are a little bit like the porch lights, and we ground them the same way. All chandeliers have the metal bar for support. When we install the power, we need to be careful. Most of these will have clear fixture wires. How do we tell the hot (black or red) from the neutral (white)? In all cases the identified wire will be the neutral. The most common method is have a single or multiple raised rib on the wire. Some will have a single line of color and some will come with a sticker identifying them. Be careful with the sticker; we have seen them mis-marked at the factories. The raised rib, neutral, goes to the

white, and the smooth wire, hot, goes to the black or red wire. Having the correct polarity is important because if they are reversed the fixture will still work but the homeowner could be exposed to energized metal. To connect the light, install a threaded stem through the metal support bar. When the stem is the correct length, install a star washer and nut on the bottom side so the stem will stay in place.

Fireplaces

When I started this job, it was uncommon to see a fireplace in a home. Now it is almost a standard option. Wood burning, gas, and electric are common. They are always inspected at the manufacturer's facility, but there are some items that get completed on site. On most fireplaces the flue pipes are run through the roof and flashing but not completed because of height restrictions. At the point where the flue passes through the flashing, a storm collar is required. This is flat piece of metal formed in a circle. This gets wrapped around the joint and snapped together. The storm collar also must be sealed to the pipe at the top so water cannot slide down between the flue and flashing into the home. Another thing to check on wood-burning fireplaces is the actuator arm. This is located behind the right door on the side. This is a damper for the combustion air inlet and, if it is closed, the firebox will not get enough air when operating. It is used to keep cold air out of the home when not in operation. Actuator arms sometimes have a screw in them that needs to be removed. Let the homeowners know about this.

In our next edition, I will review gas appliances, plumbing, and exterior siding. If you have questions or requests for information, contact me at (503) 378-6065. ■

VIN tracks RVs, park trailers *continued from Page 10*

The check digit calculation chart lists multiplier numbers, which never change.

Multiply each of your character slots by the multiplier number. When all 17 VIN numbers are multiplied, add the total and divide by 11. This will give you a number with a decimal at its end. This decimal corresponds to table B and gives you another whole number. This is the check digit that goes in the ninth slot in your VIN.

The Building Codes Division has taken on the manufactured-structure titling program that had been the responsibility of the DMV, as mandated by Senate Bill 486. Since the change, VIN issues have already popped up with park trailers.

This is a confusing process. If you have questions or concerns, or if you need help getting through the calculations, please call Brian Lamb, (503) 510-2732. ■

BCD protecting customers from identity theft

By Irene Lickiss

You see it on the news and read about it in the newspaper: Identity theft has become one of the fastest-growing crimes in the nation.

Protecting our customers is the best service we can provide. To protect our customers from identity theft, we have changed the way we handle credit card transactions.

As of Feb. 1, 2007, we can no longer take your credit card information over the phone. Below is the new procedure for credit card transactions.

All credit card payments must be either mailed to:

DCBS/BCD
P.O. Box 14610
Salem, OR 97309-0445

Or faxed to the secure fax line: (503) 373-0228.

Continue to fax nonpayment documents to our other fax number: (503) 378-4101. ■

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If you want to be included on the *Manufactured Home Update* mailing list, contact Albert Endres, phone (503) 378-5975, e-mail albert.g.endres@state.or.us.

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