

Property Inspection Report



Street Address City, State and zip code

Inspection Date: mm/dd/yyyy



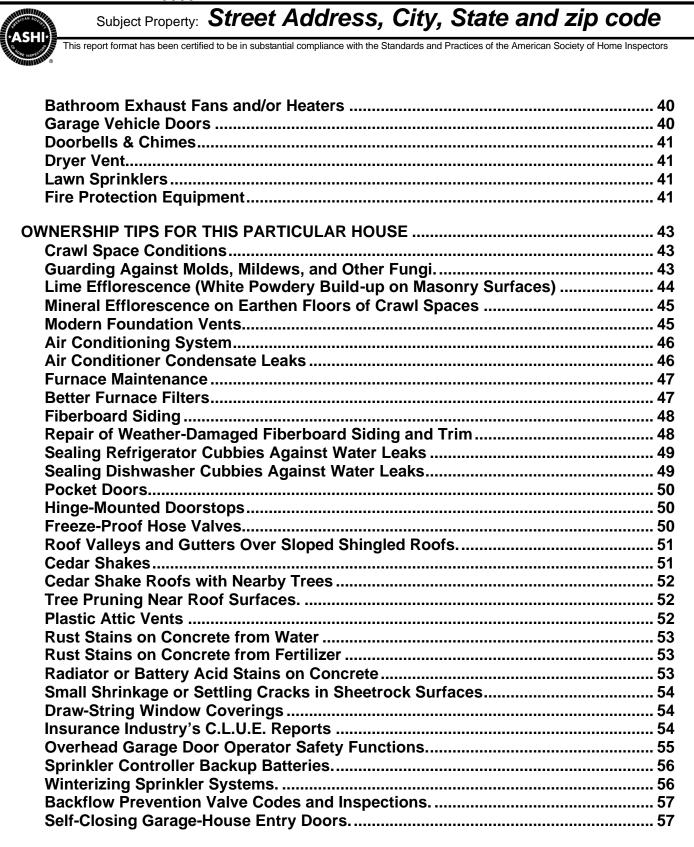
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OVERVIEW

Dear John & Jane Buyers,

Thank you for choosing me as your home inspector.

Your prospective home is basically sound and safe. However, a number of rather typical inspection issues were identified.

Please review this report carefully before releasing your contingency.

If you need further explanation regarding this home's conditions, please don't hesitate to call:

Our 24-hour, 7-day office number is: (208) 338-9144.

Sincerely,



tan Jundel

Stan Audette, inspector

APPROXIMATE YEAR OF CONSTRUCTION: 1993

CURRENT WEATHER: Cold (35°F), partly cloudy, rain, snow & hail. Rain, snow and hail during the day. **RECENT WEATHER:** OTHER CONDITIONS: Vacant home. CLIENT(s): John & Jane Buyers BUYERS' AGENT: **Referring Agent** Referring Agency AGENCY: LISTING AGENT: Listing Agent AGENCY: Listing Agency John & Jane Buyers THOSE PRESENT: **Referring Agent**

Suggestions for Understanding and Using This Report

No property is perfect.

Every building has imperfections or items that are ready for maintenance. It's the inspector's task to discover and report these so you can make informed decisions. This report should not be used as a tool to demean property, but rather as a way to illuminate the realities of ownership.

Maintenance costs are normal.

Homeowners should plan to spend around 1% of the total value of a property in maintenance costs, annually. (Annual costs of rental property maintenance are often 2%, or more.)

If considerably less than this percentage has been invested during several years preceding an inspection, the property will usually show the telltale signs of neglect; and the new homeowner may have to play "catch up" with large sums of money and time.

This report is not an appraisal.

When an appraiser determines worth, only the most obvious conditions of a property are taken into account to establish a safe loan amount. In effect, the appraiser is representing the interests of the lender. Home inspectors focus more on the interests of the prospective buyer; and, although inspectors must be careful not to make any statements relating to property value, their findings can help buyers more completely understand the true costs of ownership.

This report may include (upon specific request) cost estimates for repair or replacement of certain items.

Where estimates are given, they may appear as a range of possible costs. The low figure of the range is the inspector's best guess of current material costs, alone – the higher figure of the range includes reasonable retail profits on the materials, together with reasonable labor costs, overhead, and profit for qualified contractors. The client is encouraged to obtain several bids from licensed contractors before agreeing to any work, however.

This report may include estimates of normal useful lives for certain items.

Where estimates of normal, useful life for any components or appliances are offered in the report, the inspector is relying upon widely published data for similar items or systems. When these data are compared to known or estimated ages given in the report, the client may form his or her own opinions as to likely remaining life.

We offer future assistance at no cost.

If you find yourself needing a second opinion regarding repairs or renovation at any time in the future, please give us a call. Most of the time, we should be able to help you avoid highpressure marketing tactics or costly errors in judgment. Consultation by telephone costs you nothing.

If You Have Any Questions please feel free to contact us at any time. We will be happy to discuss your report or provide further maintenance tips.

(Master copies of all reports are kept in our files for future reference.)

Good Luck! We wish you the best!

SERVICE AGREEMENT

(PLEASE READ CAREFULLY)

Between: AAD INSPECTION CORP. (Company)

And: John & Jane Buyers (Customer)

Re: Street Address, City, State and zip code (Subject Property)

The Company agrees to perform an inspection and prepare a report to enhance the Customer's knowledge of major systems and aspects of the Subject Property. Information conveyed will consist of professional opinions, only, and will be based upon the Company's customary efforts to maintain accuracy.

While the Company strives to discover and report in a manner that can significantly reduce the Customer's future possible health, safety, and financial risks, the Customer agrees that it is not reasonably possible to eliminate all such risks through the procurement of this inspection service. It is further understood and agreed that the inspection may be limited to readily accessible areas of the property and that the report will be based upon observations of apparent conditions existing at the time of the inspection. The Company shall not be required to dismantle items or systems, move, remove, or lift personal property, debris, or snow in order to perform the inspection, but may do so at its option. The Company is not responsible for the discovery or reporting of latent or concealed defects or deficiencies. (The Company cannot perform a functional inspection on a system if its respective public utility has been shut off.)

The inspection and report might not address and are not responsible to address the possible presence of, or danger from, any potentially harmful substances or environmental hazards including (but not limited to) radon gas, lead paint, asbestos, urea formaldehyde, toxic or flammable chemicals, or water and airborne hazards. Any information that may be conveyed by the Company for the benefit of the Customer with regard to such hazards is not to be construed as being in compliance with inspection or reporting protocols of any regulatory bodies unless such compliance is specifically claimed in the report.

This company and its inspectors are not licensed or insured as pest, fungus, or mold/mildew inspectors. Any information that may be conveyed by the Company for the benefit of the Customer with regard to pests or bio growths, or conditions conducive to their attraction or proliferation is made without warranty. These services are available from others licensed or certified in their respective fields.

The inspection and report do not address compliance or certification regarding past or present governmental codes or regulations of any kind. We are not code inspectors.

THE COMPANY IS NOT AN INSURING AGENT IN ANY RESPECT. The inspection and report are not intended as (or to be used as) a guarantee or warranty (express or implied) regarding the adequacy, performance, or condition of any structure, item, or system. All warranties (both express and implied) are disclaimed, including any warranty of merchantability or of fitness for a particular purpose.

In no case shall the Company be liable to the Customer for any special, incidental, or consequential damages. In no event shall the Company's total liability to the Customer for damages, losses, and causes of action, whether in contract, tort (including negligence and malpractice), or otherwise exceed the amount actually paid by the Customer for the Company's inspection and report.

If legal action is brought against the Company for any reason, the Customer agrees to pay reasonable expenses for pro se defense or representation by an attorney if the Company prevails.

The Customer agrees to hold <u>Referring Agent & Referring Agency</u>

forever harmless regarding liabilities for any or all consequences arising from the inspection and report. The report is provided for the exclusive and confidential use of the Customer.

The use of any information conveyed through the inspection and report by any party shall be deemed as a contractual understanding, acknowledgment, and acceptance of all terms of this agreement.

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INSPECTION FINDINGS (Defects, Imperfections, Etc.)

Major Issues

These are findings of consequence to the safety, soundness, sanitation, or future integrity of the property that may individually require more than \$500 to cure. (They are listed in the order discovered).

(I perceive no issues in this category. However, it's entirely possible that any of the "Lesser" or "Cosmetic" inspection issues listed below could cost more than an arbitrary \$500 to address to the satisfaction of the prospective buyer.)

Lesser Issues

These include findings of consequence to the safety, soundness, sanitation, or future integrity of the property, which may individually require less than \$500 to cure. This section may also include items normally expected to be present or in working order for a property of this type, age, or value. (They are listed in the order discovered.)

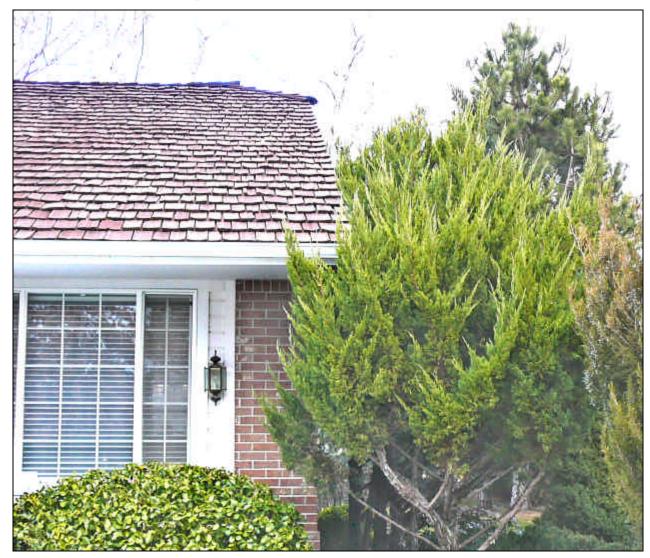
1. The juniper shrubs at the northeast (right rear) corner of the driveway extend out over the concrete enough to possibly interfere with vehicles backing out of the garage. Perhaps they should be trimmed back.





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2. The row of junipers planted along the right side of the house has matured enough to begin impinging on the side of the house and soon upon the roof. They need to be trimmed away at this time. As long as these junipers remain in place, they should be trimmed annually to keep their branches from touching the house.

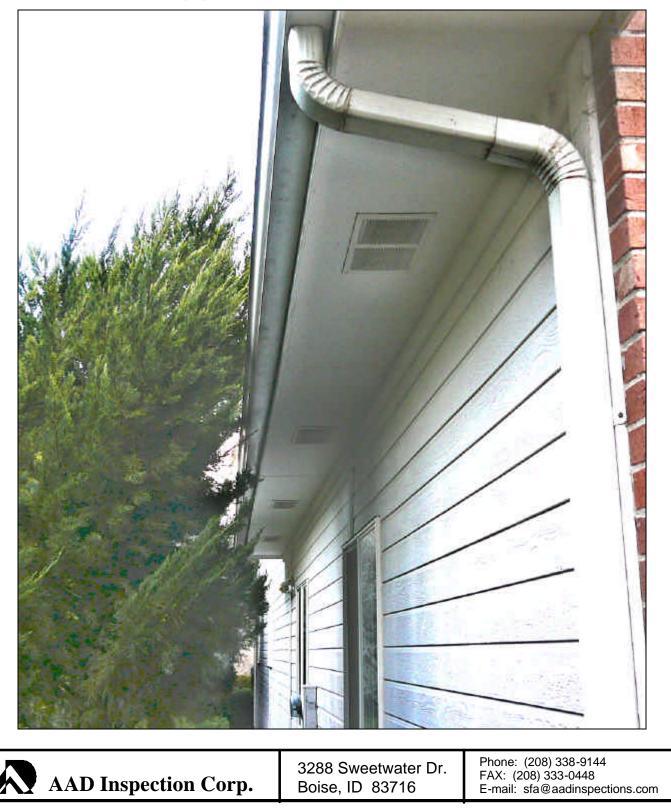


3. The lower 16 inches or so of fiberboard siding is absorbing moisture here and there around the house. Therefore, I suggest taking care at this time to ensure that the bottom edges of the siding are well sealed against water entry. (Please refer to further discussion regarding of maintenance of fiberboard siding, which I have included in the section titled "OWNERSHIP TIPS FOR THIS PARTICULAR HOUSE" near the end of this report.)



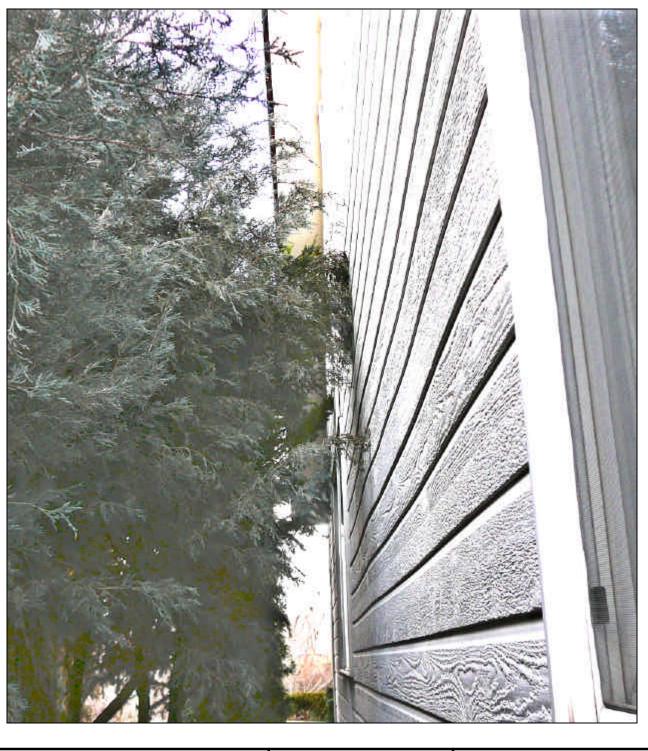
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4. The juniper tree at the left front corner of the house is impinging on the roof. Its branches should be kept pruned away annually.





5. The small trees near the left rear corner of the house are impinging on the house and roof. They should be trimmed back annually.





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6. The pine tree near the left rear corner of the house may be planted too close to the foundation. As it matures further, its trunk will be pushing on the roof eave. It's also possible that its roots may eventually threaten the foundation. Therefore, I strongly suggest having an experienced tree surgeon address this issue. If this tree is to remain in place, it is important to rake the dead pine needles from the wood roof covering to avoid trapping moisture that may lead to dry rot damage.



7. A number of foundation perimeter vents are partially covered by landscaping soils. I suggest placing vent wells in front of them.



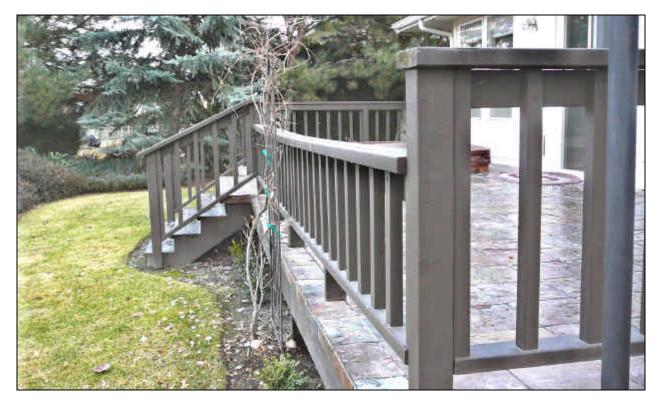


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8. Most of the vertical support posts for the redwood deck behind the house appear to have no substantial footings. I suggest temporarily bracing the deck from intermediate posts and replacing the post bases of each permanent footing. I further suggest that masonry footing blocks be placed under each post to avoid direct wood-to-earth contact as much as possible. At this time, the north perimeter of the deck is sagging noticeably due to the lack of support from the posts. This sagging can be seen in the following two photos.







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9. Portions of the fiberboard siding (up to about 30 inches from the ground) along the right side of the house have absorbed water enough to cause "pillowing" around the nails. However, at this time the siding still feels rather firm when poked with a screwdriver. I strongly suggest ensuring that all over-driven nail heads are sealed against further water absorption. I also suggest ensuring that the bottom edges of each 16-inch-wide siding strip is well sealed along its bottom edges. (If further water absorption is stopped at this time, this slight amount of cosmetic distortion to the wood should be acceptable.) The following two photos show close-ups of the siding "pillowed" near nail heads.





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10. It appears that water has been leaking through the cedar shake roof covering, behind the eave fascia, and into the soffit box cavities along the rear of the house, about over the hot tub area. The following two photos show some swelling and discolorations due to this effect. I suggest having a qualified roofing contractor address this issue further. Additionally, similar stains are also noted on the painted surfaces of the soffit panels at the right front corner of the house. I also noted some similar moisture evidence at the left rear (northwest) corner of the garage. At this time, no real damage has been done to the soffit panels. If the leaks are effectively stopped, the stained areas of the soffit panels should be coated with stain-blocking primer and repainted to reasonably match the surrounding surfaces.





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- 11. The electronic "eyes" of both overhead garage doors' stop-and-reverse safety feature are mounted about 8 inches above the floor. I suggest considering lowering these to no more than 4 inches above the floor to provide greater protection for children and small animals. (Note: This suggestion is not found in building codes.)
- 12. The wash sink in the garage is not adequately secured to the wall to protect its plumbing connections. I suggest securing it further.
- 13. NOTE: Most houses of this size and value have gas water heaters sized from 50 to 65 gallons in capacity. However, the water heater in this house is only 40 gallons. (The prospective buyers asked me to offer opinions on such matters during this inspection.)
- 14. Some corrosion is noted on the front face of the furnace's heat exchanger at the upper left corner of the row of flame ports, as shown in the following photo. I can



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not explain why the corrosion would have formed at that location. Although I do not perceive any significant threat to the integrity of the furnace due to this corrosion, perhaps a qualified HVAC contractor could lend further valuable insight.



15. The feed-air register brought out into the garage below and in front of the furnace and water heater platform is not allowed by codes. (There should be no direct flame paths between the garage and the house air. Furthermore, this could be a possible



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route to pass carbon monoxide gasses from the garage into the house.) Therefore, I suggest removing this register or blocking it off. A qualified HVAC contractor should address and/or correct this issue, as necessary.



16. The electrical outlet below the front of the furnace in the garage is grounded, but not GFI-protected. A qualified electrician should address and/or correct this issue, as necessary. (This outlet might not remain if and when the wheelchair ramp is removed.)





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- 17. NOTE: By peering through the storage doors at the west end of the wheelchair ramp structure in the garage, I noted that the original stoop and steps from the garage-house entry door down into the garage are still in place. (However, I had no way of verifying their integrity or suitability.)
- 18. The pet opening installed through the garage-house entry door reduces the door's ability to perform as a fire barrier. Therefore, I suggest considering replacing the door.





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19. The bottom bracket for the tilt-down ironing board in the laundry room is too loose to be effective. The rear guide pipe came out of its track on the first attempt to lower the board into its use position. Perhaps some repairs or modifications could be made. The arrow in the following photo points to the loose bracket.





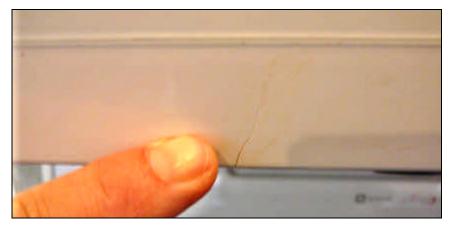
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20. NOTE: The garbage disposer under the kitchen sink is about the smallest and least powerful appliance that could have been purchased. A larger, more powerful appliance will probably help drain away food particles to avoid nuisance clogs. (The prospective buyers asked me to provide such opinions during the inspection.)



21. The bottom rail of the plastic door frame for the microwave appliance is cracked upward about 1¹/₂ inch, as pointed to in the following photo.





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22. The kitchen side of the pocket door rubs in its wall pocket at about neck level. This lack of clearance will eventually scrape the paint off the door. I suggest having a qualified door contractor address this issue.



23. The kitchen countertop has settled away from its backsplash just enough to form a slight crack behind the kitchen sink, as shown in the following photo. I suggest filling the crack with matching grout or caulking.





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- 24. NOTE: The two French-style pocket doors separating the formal dining room from the formal living room already rub rather heavily on the carpeting. If thicker padding or carpeting is installed, these doors will absolutely need to be shortened.
- 25. Part of the bottommost pantry door hinge for the right pair of bifolding doors at the northwest corner of the formal dining room is detached. I suggest having a qualified cabinetmaker or handyman address this issue.



Boise, ID 83716

E-mail: sfa@aadinspections.com

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26. The large master bathtub is leaking into the crawl space at its drain flange gasket. A qualified plumber should address and/or correct this issue, as necessary.



27. NOTE: I did not prove whether the three front porch lights at the center and right side of the house were operating. All other porch lights turned on, with the exception of the photo/motion controlled porch light at the rear entry. I suggest asking the owner about these.



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Cosmetic Issues

These issues regard imperfections that have no bearing upon the safety, soundness, sanitation, or future integrity of the property, but which may be of concern to the Customer, regardless of cost to address. (They are listed in the order discovered.)

28. I noticed only one small crack in all the sections of the expansive concrete driveway. It is at a location that makes cracking nearly inevitable.



29. Some of the fiberboard siding is a little wavy here and there around house; but, in my opinion, not exceeding the local industry's standards of care for the time of construction.



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30. The gutter downspout at the right rear corner of the house discharges onto an area of ground that does not slope effectively away from the house. However, inspection from within the crawl spaces under the house indicates that exterior surface waters have not caused any flooding in the adjacent crawl space areas. Therefore, I see no need to recommend corrections to grading or downspout extensions at this time.



- 31. There are some minor vertically oriented cracks in the concrete foundation that are of cosmetic concern, only. (These are typical for this climate.)
- 32. Both pop-in plastic buttons for the tops of the wash sink faucet valve handles in the garage are missing.





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33. One of the 12x12-inch ceramic tiles on the kitchen floor makes a popping noise at its northeast corner when stepped upon. This one tile is no longer securely seated to its substrate. I suggest having a qualified tile setter address this issue. The arrow in the following photo indicates the loose corner.



34. The sharp metal corners at the fronts of the roll-out shelf hardware in the kitchen base cabinets can easily scratch the interior surfaces of the adjacent cabinet doors. For this reason, I suggest considering installing white vinyl protectors made for this



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purpose. The arrow in the following photo indicates the position of placement for the protectors. (I noted scratches only on one of the four cabinet doors.)



- 35. One faint streak of food soils is noted between the glass panels of the lower oven door. This can require disassembly of the door to access the soiled surfaces if cleaning is desired. (Please refer to further discussion regarding this issue, which I have included in the section titled "OWNERSHIP TIPS FOR THIS PARTICULAR HOUSE" near the end of this report.)
- 36. The Silhouette® blinds at the front of the formal dining room and formal living room have a few dead insects in their channels. (Please refer to further discussion regarding cleaning of Silhouette® blinds, which I have included in the section titled "OWNERSHIP TIPS FOR THIS PARTICULAR HOUSE" near the end of this report.)



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37. One of the 4x4-inch ceramic tiles on the west wall of the master shower at about chest height is cracked because of holes drilled in it for something that was previously mounted on the shower wall. I suggest having a qualified tile setter address this issue, if desired.





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38. The control knob for the dimmer switch near the latch jamb of the rear sliding glass entry door is missing. However, the switch still operates adequately. Most likely, a whole new dimmer switch would need to be provided, rather than simply trying to find a matching knob.





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39. The four head cushions in the corners of the basin of the outdoor hot tub are suffering form the long-term exposure to chemicals used in the water. They may need to be replaced in the near future.



The hot tub's water was being held at 79°F by the thermostat. The filter and circulation pump system seemed to be working fine. The water level was about 4 inches below optimum; but I could not determine whether the basin or it plumbing have any leaks, as it was too wet from rain around the tub at the time of this inspection. However, the air blower and jets all seemed to be working. (I did not verify flow from individual jets under the water.)



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DESCRIPTIONS OF MAJOR SYSTEMS & FEATURES

Foundation

<u>Description of foundation system</u>: Cast-in-place concrete footings and stem walls form the perimeters. Intermediate support is provided by posts and beams resting upon concrete pier pads in the crawl spaces.

<u>Comments</u>: The foundation was observed from both outside and inside. Minor typical settling and/or shrinkage cracks are noted; but these are not of structural significance. No signs of significant movement since original construction were observed. The foundation system appears adequately sound for its age and type.

Crawl Space

<u>Method of inspection</u>: Crawled to all areas.

Location(s) of access points: Through the floor of the walk-in closet off the left front bedroom.

Type and thickness of perimeter insulation: Fiberglass batting, 6-inch.

Type and thickness of flooring insulation: None.

Comments: The crawl spaces were dry at the time of this inspection.

Grading & Drainage

<u>Types of systems in place</u>: Metal gutters and downspouts are installed at all eaves.

<u>Comments</u>: The grading around the perimeter of the foundation generally allows surface waters to flow away from the dwelling, except near the right rear corner of the house. However, there is no evidence of exterior surface water entering and ponding in the crawl space. (A little has entered through the cold joints between the concrete footing curbs and the stem walls in the past along the right side of the house; but none has actually puddled in the crawl spaces.)



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Roof Covering

Method of roof inspection: Viewed by walking upon all surfaces. <u>Current top roof covering</u>: Cedar shakes. <u>Estimated age</u>: 14 years. <u>Number courses in place</u>: One, only. <u>Estimated "Remaining Functional Life"</u>*: 12 to 17 years. <u>Estimated "Remaining Economic Life"</u>*: 10 to 15 years.

- * "Remaining Functional Life" is the amount of time left before an average homeowner would choose to replace a roof because of leaks occurring that are too numerous or expensive to simply repair.
- * "Remaining Economic Life" is the amount of time left before a roof would most likely need to be replaced in order to satisfy a prospective buyer who may be receiving advice from a roofing repair contractor or other inspector. (Most prospective buyers and some lenders like to be assured that at least 3 to 5 years of "useful life" remain.)

<u>Comments</u>: This cedar shake roof covering has been spray coated with a preservative, red-colored, stain. This color is indicative of a particular cedar roof maintenance service company in the Treasure Valley by the name of Shakes Alive. I suggest asking the sellers when this was done.

This cedar shake roof appears to be in far better than average condition and quality for its age. Its total useful life might exceed 30 years B.

However, the underlying tarpaper (roofing felt) will eventually become exposed to the weather as the shakes continue to age. When felt is exposed to sunlight and weather for longer than 3 to 5 years, it embrittles and begins to fail—letting rainwater through it. I suggest covering all instances of exposed felt with brown sheetmetal "slip shingles" (about 6"x10", each) at 3-year intervals throughout the remaining useful life of this cedar roof. The slip shingles can be slid up and under the existing wood shingles or shakes until their bottom edges align with the bottom edges of the shakes under which they are being placed. (In this manner, they become invisible from the ground.) These slip shingles will usually stay in place by friction, alone – no nails are needed.

NOTE: Many roofing contractors subscribe to this method of ongoing maintenance; but some prefer to use actual Cedar shakes or shingles. If wood repair shingles are to be used, they must be inserted only by knowledgeable roofers, as the underlying felt can be easily damaged by these thicker pieces.



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While the metal slip shingles are very inexpensive and easy to correctly install, roofing contractors will tend to include additional charges to cover the extra business costs of implied warranties whenever they make repairs to any roof, rather than being asked to replace it.

Roof Structure & Attic

<u>Accessibility and/or method of inspecting attic</u>: I entered and viewed most areas. Roof Framing: Engineered truss system.

Roof sheathing (decking): OSB (Oriented Strand Board) sheeting.

<u>Type and thickness of insulation</u>: About 16 inches of blown-in fiberglass over the living spaces and approximately, with about 8 inches over the garage ceilings \bigcirc .

<u>Comments</u>: The attic spaces appeared dry and well ventilated at the time of this inspection. No structural problems were noted.

Walls (Interior & Exterior)

Perimeter wall structures: Stud wall construction.

Partition wall structures: Stud wall construction.

Exterior surfaces: Fiberboard siding, with fiberboard trim, painted. Brick masonry veneer at the front, only.

Interior surfaces: Sheetrock, taped, textured, and painted.

<u>Comments</u>: The exterior and interior wall surfaces are in generally satisfactory condition; but will need some maintenance at this time to avoid further moisture absorption.

Ceilings & Floors

<u>Ceiling structures</u>: Bottom cords of trusses.

<u>Floor structures</u>: OSB (Oriented Strand Board) subflooring over dimensional lumber beams over post-and-piers supports.

<u>Comments</u>: The floor and ceiling surfaces are generally in good condition throughout this home.



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Doors

<u>General descriptions</u>: Interior passage doors are of cast-formed Masonite, resembling raised-panel doors.

<u>Comments</u>: The doors on this property were in generally good condition.

Windows

General descriptions: Vinyl-framed. Thermal-paned.

<u>Comments</u>: All the windows were opened and closed. They all operated and locked satisfactorily at the time of this inspection.

Living Room and Great Room Fireplace & Chimney

General description: Double-sided. Natural-gas. Metal flue.

Location of gas valve (if any): Inside the fireplace chamber, on the gas appliance. Comments: All parts of the fireplace appeared intact, clean, and safe for use.

NOTE: This type of fireplace will typically "fog" its glass viewing panel for a few minutes during the start of each use. After the glass is warmed by the flame, the condensate disappears. (This is normal.)

Eventually, the condensate will collect enough dust and carbon that cleaning of the glass will be desired. The glass viewing panel is usually easily removable for cleaning; but it is important to ensure correct reassembly, as a few cases of carbon monoxide poisoning have resulted from incorrect replacement of the glass on this type of unit. It is important to follow the manufacturer's instructions when removing and replacing the glass viewing panel.

Great Room and Master Bedroom Fireplace & Chimney

General description: Double-sided. Natural-gas. Metal flue.

<u>Location of gas valve (if any)</u>: Inside the fireplace chamber, on the gas appliance. <u>Comments</u>: All parts of the fireplace appeared intact, clean, and safe for use.

NOTE: This type of fireplace will typically "fog" its glass viewing panel for a few minutes during the start of each use. After the glass is warmed by the flame, the condensate disappears. (This is normal.)



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Eventually, the condensate will collect enough dust and carbon that cleaning of the glass will be desired. The glass viewing panel is usually easily removable for cleaning; but it is important to ensure correct reassembly, as a few cases of carbon monoxide poisoning have resulted from incorrect replacement of the glass on this type of unit. It is important to follow the manufacturer's instructions when removing and replacing the glass viewing panel.

Driveways, Sidewalks, Patios, etc.

General descriptions: Concrete flat work.

Comments: The concrete is in excellent condition for its age.

Cabinets & Closets

<u>Comments</u>: The cabinets and closets were in generally good order. All cabinet doors, drawers, rollout shelves, and closet doors are operated (unless personal property prohibits).

Service & Entrance Panels

Service type: Underground service.

Service amperage and voltage: 100-amps (120/240 volts)

Service entry conductor materials: Stranded aluminum.

<u>Locations of meter, main, and sub-panels</u>: The meter is located at the west central garage exterior. The main distribution panel is located at the interior wall of the garage, just inside from the meter.

<u>Comments</u>: The main panel covers were removed and replaced during the inspection. All components were visually inspected and found to be essentially in good order.

Branch Circuits

<u>Types of overcurrent protection</u>: Circuit breakers.

<u>240-volt conductor materials</u>: Stranded aluminum (for some of the interior appliance wiring). Solid copper (for all lighting and receptable circuits). Stranded copper (for the exterior hot tub).



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120-volt conductor materials: Solid copper.

<u>Comments</u>: The branch circuits of this home are grounded.

Lighting

<u>Comments</u>: The lighting is generally in good order.

Receptacles & Switches

<u>Descriptions</u>: The lighting and receptacle circuits are part of a 3-wire, grounded system.

<u>Comments</u>: A representative sampling of outlets were tested ... usually all that can be easily reached.

Heating Equipment

Energy source: Natural gas.

<u>Type</u>: Central furnace.

Location: In the garage.

Method of heat distribution: Central, forced-air system, with ductwork.

<u>Filter types and locations, if applicable</u>: A custom filter access panel is installed above the furnace. Two, 16x20x1-inch, passive, disposable filter elements are installed in a "V" configuration inside the sheetmetal plenum above the furnace's blower compartment.

<u>Comments</u>: The furnace is now about 14 years old. This type of furnace typically lasts from 12 to 17 years, but may last considerably longer if its filters are kept clean and if it is professionally serviced on a regular annual basis.

The furnace was operated in its heating mode for about 5 minutes. The flame shape, color, and action were observed during startup and blower operation. The accessible portions of the heat exchanger and other furnace components were visually inspected.

Cooling Equipment

Energy source: Electricity.



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<u>Type</u>: Refrigerative, air-to-air.

Location of Compressor Unit: At the left exterior.

Method of cool-air distribution: Central forced-air, integral with the heating system.

<u>Comments</u>: The compressor unit is now about 14 years old. This type of appliance will usually last from 12 to 18 years, but may last considerably longer if kept professionally maintained on a regular annual basis.

The outside air temperatures were too cold to allow me to functionally test the air conditioning system without risk of damage to the compressor unit. (Compressor units should not be operated whenever the outside air temperatures are below 45 or 50 degrees Fahrenheit.)

I suggest having the air conditioning system serviced early each summer by a qualified contractor. However, in order for the service to be meaningful, the outside air temperature must be above 70 degrees Fahrenheit when this service is performed.

Make sure the service person first inspects the fine air fins of the heat exchanger coils at both the outside air compressor unit and at the indoor refrigerant coils near the furnace to ensure that they are not clogged with dust. (This must be done prior to making any adjustments to the coolant charge.)

This annual maintenance is very important to ensure that the compressor unit operates the minimum number of hours during each cooling season. (The life of a compressor unit is directly related to the number of actual running hours – not the number of years it sits on the property.)

When a gas furnace is part of the overall HVAC system, I suggest having it serviced annually at the same time as the air conditioning. (Gas furnaces should be checked and serviced annually, but the time of year doesn't matter so much.)

Ducts & Vents

Descriptions: Insulated in the attic spaces. Insulated in the crawl spaces.

<u>Comments</u>: The ductwork was inspected for continuity only where visible access was available.

NOTE: Although air flow may be discernible at supply registers, home inspectors are not able to determine whether the availability and balance of air flow is acceptable to all prospective occupants.



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Water Supply Systems & Fixtures

Source of domestic water: Public water system.

Location of main shut-off valve: Under the floor at the crawl space opening.

<u>Supply piping</u>: The buried potable water service line from the public system to the house is of 1-inch blue plastic pipe. The supply piping throughout the house is mostly of 1-inch, ³/₄-inch, and ¹/₂-inch gray polybutylene pipe with barbed copper insert fittings.

<u>Comments</u>: All visible supply piping appeared in good order. No leaks in the pressurized piping were found.

NOTE: There have been class-action lawsuits in effect across the nation involving gray polybutylene piping systems; but, in my opinion, the nature of the systems most typically found in the Treasure Valley present very little actual risk. Nonetheless, prospective buyers may wish to contact local plumbing contractors or other qualified advisors in order to form their own opinion.

Drains, Wastes, & Vents

<u>Type of collection system (if known)</u>: Public collection system. <u>Visible house drain piping materials</u>: Black plastic.

<u>Comments</u>: All drains were operated during the inspection. (The shower heads were operated for an extended period.)

Water Heating Equipment

Energy Source: Natural gas. Capacity: 40-gallon. Model year (or date of installation): 1993. Location: In the garage, next to the furnace.

<u>Comments</u>: The flame chamber appeared reasonably clean and dry. No leaks or signs of excessive corrosion were noted.

Dishwasher

Description: Built-in, under-the-counter.



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<u>Comments</u>: I ran the dishwasher through a complete "normal" cycle. Its soap dish opened, its spray wands rotated, and it did not visibly leak during operation.

Food Waste Disposer

<u>Comments</u>: The appliance appeared to be in serviceable condition.

Kitchen Exhaust

<u>Type</u>: Built-in Spacesaver[®]-style microwave with exhaust fan, above the range.

<u>Comments</u>: The appliance appeared to be in good order.

Major Cooking Appliances

Descriptions: Free-standing electric range/oven.

<u>Comments</u>: All heating and control functions appeared to be working correctly at the time of this inspection.

Microwave Cooking Equipment

<u>Description</u>: Built-in Spacesaver[®]-style, above the range.

<u>Comments</u>: The appliance successfully heated a cup of water for 55 seconds at a power level setting of 9.

Bathroom Exhaust Fans and/or Heaters

<u>Comments</u>: All bathroom exhaust fans appeared to discharge adequately to the exterior.

Garage Vehicle Doors

Descriptions: Two, multiple-sectioned metal overhead.

<u>Types of safety reversing (if present)</u>: Both electronic eye and force-sensitive stopand-reverse functions are in place.

<u>Comments</u>: The doors operated smoothly through their complete ranges of travel.



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Doorbells & Chimes

Descriptions: Two-tone doorbell.

<u>Comments</u>: The front doorbell seemed to work fine.

Dryer Vent

Description: Rigid sheetmetal tubular ducting.

<u>Termination</u>: Exterior vent cap through siding at the left exterior of the house just behind the garage.

<u>Comments</u>: I was unable to functionally test the dryer's vent ducting without an appliance in place.

Lawn Sprinklers

<u>Source(s) of water</u>: Interconnected with the domestic water supply.

<u>Number of zones</u>: Eight zones connected out of an eight-zone controller mounted on the west interior wall of the garage near the wash sink.

<u>Comments</u>: The sprinkler system appeared to be shut down for the winter. Therefore, I did not attempt to operate it.

The overall condition of the surrounding lawn and landscaping indicates the likelihood that the sprinkler system is adequately designed and was operating well during the last part of the previous irrigating season. (It is usual to expect some minor repairs and/or adjustments each spring when the system is reactivated, however.)

Nonetheless, I suggest asking the Seller to separately certify that the system has been properly winterized in order to protect it from freeze damage.

Fire Protection Equipment

Description: Both hard-wired and battery-backup. If one unit sounds, they all sound.

<u>Comments</u>: Hard-wired smoke detectors appear to be installed according to codes in effect at the time of construction.



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I suggest replacing smoke detectors at least every 5 to 7 years, as their sensors will often begin failing after that period (even though their alarms will continue to sound when their test buttons are pressed).

Smoke detectors may be periodically checked for response to actual smoke by homeowners. (Try using a short candle at the bottom of a tall glass jar. The candle will tend to produce a lot of smoke due to lack of oxygen, and the jar will keep hot wax off hands and carpeting.) (If such testing is done too frequently, however, the smoke may prematurely coat the sensors with a film that could block their sensitivity.)

I also suggest the installation of carbon monoxide detectors to protect all sleeping areas whenever combustion appliances are present in the home.



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OWNERSHIP TIPS FOR THIS PARTICULAR HOUSE

Each of the following subjects was included in this report because it pertains directly to this particular property. Each short article is written by Stan Audette for the benefit of his customers in hopes that their ownership experience will be enhanced.

Crawl Space Conditions

The spaces under this home should be kept relatively clean and dry. It's wise to keep all wood or paper debris or personal property removed from the crawl spaces ... especially from resting in direct contact with the soils. (Any type of cellulose-containing material can become an attractor for wood-destroying organisms such as molds, mildews, wood-rot fungus, wood-boring beetles, or termites, etc.)

I suggest inspecting crawl spaces at least twice each year. Someone should at least peer into its access with a flashlight. This will help detect water flooding that might develop due to an unnoticed leak in the supply or drain plumbing. An occasional peek into the crawl space will also let you know how the gutters and downspouts are performing, as well as tip you off to possible exterior grading and drainage problems.

Guarding Against Molds, Mildews, and Other Fungi.

Molds and mildews (recently so often referred to as "toxic molds") can grow anywhere in and around our homes where the conditions are right. Molds need darkness, relative humidity above 50%, and organic food sources.

Sunlight will kill mold rather quickly. One way to kill mold or stop it from getting a "foothold" is to periodically let as much sunlight as possible into the areas where it might otherwise thrive.

Dry environments will not allow mold to grow. Even though mold spores may be present in almost any air, the spores must land on surfaces that can provide enough food and moisture for them to live. Otherwise they become dormant and eventually die. Surfaces that are being continually wetted or which never dry out can support mold colonies even when the surrounding air is relatively dry. However, if the air, itself, is continually above 50% relative humidity, the mold can thrive on otherwise dry surfaces.

Food sources can include even fine dust or lint that collects on otherwise indigestible materials. (This is how mold colonies are sometimes found on windows.) Wood, paper, or any other material containing cellulose can be a food source to molds. The significance of this is that most building materials contain these nutrients.



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All these molds, mildews, and fungi produce spores that have been floating around in our daily environment for all our lives without causing much trouble for anyone. It's the unique confinement of living spaces that lends itself to possibly harmful concentrations of these micro-organisms. That's why we are learning to become more educated and more responsible with respect to mold.

Many types of molds typically found in today's living environments may contain allergens that cause a wide variety of symptoms in individuals. These symptoms are most often related to the respiratory system, but may also involve rashes or dizziness. Not all people are allergic to these types of molds. Typically, people with compromised immune systems will be more likely to have allergic reactions. People suffering from asthma are particularly sensitive.

Some types of black molds have been identified as neurotoxins. These can cause severe, long-term damage to the nervous system. People can be hurt by these molds without ever developing outward allergenic systems. Although this type of injury is rather rare, it should make us more cautious with respect to threats from molds, in general.

Allergy doctors can usually identify which of the known molds may cause allergic reactions in any individual, but the doctors are not equipped to tell that individual whether he or she may be exposed to those molds in their daily environment. Fortunately, Southern Idaho now has mold specialists who can survey a home and identify any molds or mildews that may be present (along with other possible airborne contaminants). Slide samples of molds or other fungi can be sent off to microbiologists for analysis. Air samples can be taken.

Southern Idaho also has several mold mitigation contractors trained in removing or treating mold and reducing the conditions that may be conducive to their proliferation. However, the EPA currently recommends involving certified remediation contractors only if the affected area of mold exceeds 10 square feet. (For areas less than that, homeowners can usually feel confident in their ability to scrub away any mold with a 10% bleach solution.)

Regardless of the type or extent of mold remediation that might be required, the most important strategy is to remove the source of invasive moisture and to take steps to ensure that moisture does not return.

Lime Efflorescence (White Powdery Build-up on Masonry Surfaces)

The white powdery crystalline growths often seen on the interior sides of masonry walls are simply free lime crystals deposited by the process of efflorescence. This process does not damage or threaten the integrity of the concrete, itself; but can cause paint or plaster to release.

When moisture from soils in contact with masonry walls manages to slowly seep through, it can dissolve free lime from the unwashed sands that were typically used in concrete or mortar before premixed concrete became popular. Once in solution, the lime is carried to the exposed surfaces where the water evaporates, leaving the calcium of the lime to form slow growing crystals. It's the pressures from these expanding crystals that tend to separate finishes from concrete, pumice, or mortar. (Sometimes



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free lime or other minerals in the soils against the walls can also be carried through to create the same effects.)

There are several products on the market that can be applied directly to the problem surfaces that may be effective in bonding to the wall—thereby stopping the migration of moisture through the concrete by not allowing it to reach dry air. The application of these materials is usually rather labor intensive, if correctly done, though—making their success less likely.

Sometimes the best method for dealing with efflorescence is to encapsulate it with new wood framing and wall sheathing. However, it's a good idea to install a 6-mil vapor barrier between the concrete and the new wooden wall to help protect the wood from unwanted moisture.

Mineral Efflorescence on Earthen Floors of Crawl Spaces

Earthen floors in crawl spaces often display white, orange, brown, or yellow growths that are sometimes confused with molds or other types of fungi. If these "growths" are noted only in areas not covered by vapor barrier, they are simply the result of crystalline growths formed by the buildup of minerals that have leached up through the soils in solution with water. As the water evaporates, the minerals are left behind to form crystals. The types of minerals that were brought to the surfaces determine the colors of the crystals. (If these "growths" were fungal in nature, they would be more prevalent under the vapor barriers, as those conditions would be more conducive to fungal growths.) The crystals grow because the water is evaporated away from the surfaces. Wherever the surfaces are covered by vapor barrier sheeting, the moisture cannot evaporate away.

While there is no inherent harm done by the crystals of mineral efflorescence, the process indicates that moisture is slowly migrating from the soils into the air of the crawl spaces. Therefore, it would be prudent to ensure full coverage of the earth with 6-mil plastic vapor barrier sheeting to reduce overall moisture levels under the house. (Elevated moisture levels are conducive to the proliferation of all sorts of pests and wood destroying organisms.)

Modern Foundation Vents

The perimeter vents in the concrete walls of the foundation are operable from the exterior. It's important to keep these vents open at least 6 to 9 months during each year to assure adequate ventilation of the crawl space. (Crawl spaces that have a history of high humidity should probably be kept ventilated year round.)

Each vent has a metal push-pull linkage that protrudes through its front face. This linkage is connected to a solid sheetmetal flap hinged along the top inner side of the vent. When the linkage is pushed towards the crawl space, the metal flap is opened. Notches along the bottom side of the linkage can be used to prop the vent's flap open.

To close each vent for winter, simply pull its linkage as far towards the exterior as possible.



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Air Conditioning System

Air conditioning compressor units (the outdoor portion of the system) should not purposely be run when the outdoor air temperatures are below 45 or 50 degrees Fahrenheit. (The cold oil in their sumps tends to lift up and into the Freon (coolant), leaving none to lubricate the compressor.)

When the outdoor air temperatures are between 50 and 70 degrees Fahrenheit, the compressor can safely be run and some cooling will take place; but this cooling effect is due primarily to the fact that the outdoor air is cooler than the living space air—not due to any change-of-state of the coolant (from liquid to gas).

Air conditioning systems cannot work as designed until the outdoor air temperatures reach at least 70° Fahrenheit. For this reason, annual maintenance should not be scheduled each spring until the outdoor air temperatures will be at least this warm. Heating and cooling maintenance contractors cannot tell whether the coolant charges are correct when outdoor temperatures are below 70 degrees.

It's also important for the maintenance contractors to verify that the fine air fins of both the outside and inside refrigerant coils (heat exchangers) are free of dust clogging. (An access panel must be available to see the coils at the indoor unit. Sometimes, an access must be cut through the sheetmetal.) Freon (or other coolant types) cannot be correctly adjusted unless the coils are clean.

One should avoid purposely restarting a compressor unit within the first 3 to 5 minutes after it has stopped. (It is more difficult for the compressor motor to restart against a load. Allowing a few minutes for the coolant pressures to equalize helps take the load off the compressor.) During power outages, it's a good idea to quickly turn the thermostat to the "off" position until power is restored and appears to be stable. These precautions can help prolong the life of the compressor motor.

Air Conditioner Condensate Leaks

When refrigerative-type central air conditioning systems are working in the summer months, the indoor refrigerant coils unavoidably collect moisture from the air in the form of condensate, which gathers into larger and larger droplets of water until it drips off the coils. This water is gathered in trays beneath the coils where it flows by gravity into a condensate drain to carry the water away from the system. The drain piping should be routed either to the exterior or to another suitable drain—not just into a crawl space.

If the intended collection and drain path becomes clogged with the typical dust and lint that also lands on the same refrigerant coils (especially if the furnace filters aren't doing their job), the condensate can build up and overflow the collection trays. This causes water to leak down out of the system in places where it can often cause damage. Therefore, one should periodically check all areas directly beneath the indoor refrigerant coils of the air conditioning system for signs of leaks during the summer months when the air conditioning system is in operation. (Searching for the typical 3/4-inch and 3/8-inch soft copper tubing emerging from one of the metal cabinets at or near the furnace or indoor air handler, where the system blower is usually located can identify the indoor refrigerant coils.



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The larger of these copper-tubing lines is usually covered with black foam rubber insulation. Both lines are usually found running side-by-side from the indoor coils to the outdoor compressor unit.)

Condensate leaks down into the heat exchangers of combustion furnaces can lead to damaging corrosion that can cause breaches in the heat exchanger walls and threaten to let carbon monoxide from the flames into the living spaces.

Condensate leaks down into the crawl spaces or through the flooring can attract termites or lead to dry rot damage or the development of molds and mildews.

One should look for telltale signs of water trails or rust on metal parts of the furnace or ducting (plenums) under the refrigerant coils, or stains left from water puddles on floors adjacent to the furnace or air handler cabinets. Of course, if actual water is found puddling, then one can know for sure that a condensate leak is occurring.

If any signs of condensate leaks are noted, a qualified heating/cooling contractor should be contacted to make any necessary repairs before other problems develop.

Furnace Maintenance

Furnaces should be cleaned and checked annually. However, it's not important what time of year this maintenance is done. For this reason, it's usually wisest to have the five minutes or so of annual furnace maintenance done at the same time as the annual air conditioning service. This strategy can save homeowners the cost of an additional, unnecessary service fee each year.

Better Furnace Filters

The type of filter elements currently used in this system must be washed or replaced as often as monthly to ensure the longest possible furnace life. These simple and inexpensive furnace filters (such as often purchased in grocery stores) will typically help furnaces last up to 17 to 22 years. Whereas, the more expensive and more efficient types can help a furnace's heat exchanger last up to 35 or 40 years.

It would be wise to consider the installation of finer filters to extend the life of the furnace's heat exchanger. Usually, custom installed filter racks and appliances containing electronic, electrostatic, or pleated media filters will provide the best results. Therefore, I suggest contacting several local heating and cooling contractors to gain more knowledge about the types available.

Better filtering systems also provide the added benefits of helping keep the living spaces cleaner and reducing symptoms of allergy sufferers. People who suffer from asthma also gain more comfort from better filtering systems.



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Fiberboard Siding

Fiberboard siding should last indefinitely as long as it is kept sealed against water entry. I suggest keeping all nicks and scrapes made by pets, lawn mowers, weed eaters, etc. covered with good quality oil-based primer as soon as they're noticed. (Water-based primers soak into fiberboard materials to cause further disruption while they are drying. They cannot provide an adequate seal against further moisture absorption.)

Furthermore, the nails that were used to apply the siding will often let water into the boarding if not properly driven or if not kept sealed. Therefore, I suggest keeping all cracks or openings around nail heads sealed with good quality paintable caulking or with oil-based primer ... or a mixture of the two.

Repair of Weather-Damaged Fiberboard Siding and Trim

When the interior particles of fiberboard siding and trim have been exposed to the weather and become expanded due to water absorption, special techniques must be used to prevent further degradation and restore appearance. Simple repriming and repainting will often not effectively reseal the larger voids created by the expansion of the factory compressed wood fibers.

If the amount of expansion damage is severe enough to prevent most paints from "bridging" the gaps between the coarse fibers at the surface, but not severe enough to substantially weaken the fiberboard panels; a method of filling the large pores can be employed to effectively reseal the fiberboard from further damaging water intrusion.

A slurry of oil-based primer and drywall powder can be intermixed to the consistency of butter and applied with a brush to all surfaces that are otherwise too coarsely open to be sealed effectively with primer coatings, alone. Once the drywall powder of the slurry is worked into the open-fiber surfaces as much as possible with the ends of a brush, the primer component of the slurry will be able to form a continuous, smooth film over the surfaces that can dry to become a waterproof filler coating.

(Of course, the water damaged areas of the siding or trim should be dry before the slurry is applied; and any loose material should be first scoured away with a wire brush.)

Once the primer slurry is dried and the fiberboard is effectively sealed, color-matched water-based alkyd or latex top coatings may be applied.

I also suggest the use of polyurethane caulking to seal all small holes where nails have broken the surface, or where one wishes to generally apply caulking beads to make a "tighter" looking appearance to the exterior of the house. Polyurethane caulking cannot usually be found at paint stores because of its expense. It usually costs from \$12 to \$14 per tube to fit into the smaller-sized caulking guns. It's easier to apply than most other sealants, and has a very slow curing time. It's also very "paintable". It's made by various manufacturers and can usually be found in building supply stores or masonry supply centers. Alternatively, a paintable caulking called "Big Stretch® is available through some paint stores, which is very effective. However, regardless of the caulking used, I suggest covering it with paint after it is applied, in order to extend its life in the sun and weather.



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Speaking of painting over caulking: Don't be tempted to believe that any kind of sealant containing silicone will be "paintable". Although sealants made with silicone are great, in themselves, they simply don't allow paint to stick to them—regardless of what their manufacturers may claim.

Sealing Refrigerator Cubbies Against Water Leaks

Since refrigerators (especially those with icemaker lines) can let water onto flooring, I suggest considering sealing the perimeters of the floor coverings in their cubbies with silicone to prevent water entry into the crevices where the floors meet the walls or adjacent cabinets. This precaution may help prevent unnoticed water leaks from causing long-term damage to subflooring and structures. (I've seen many cases where hardwood flooring has become very warped for 10 feet in both directions from such leaks because water got under it and followed the grooved channels.)

If water leaks are prevented from finding their way down into or past the finished flooring, they will be more likely to advance out onto the floor surfaces in front of the appliance where they will be more readily noticed—before causing greater damage.

Sealing Dishwasher Cubbies Against Water Leaks

Dishwashers can often leak and cause great damage before problems are noticed. For this reason, I strongly suggest sealing the perimeters of dishwasher cubbies to prevent water from being able to seep down into cracks and crevices between the flooring and the adjacent walls or cabinets. Once the cubbies are sealed, any water leaks will be more likely to advance out onto the finished kitchen floor in front of the appliance where they'll be noticed before they can cause any serious damage.

Of course, two other conditions must be met in order for this tactic to work. First of all, the appliance cubby floor, itself must be at the same elevation (or higher) with respect to the finished kitchen floor. All too often when homeowners have new flooring added to older kitchens, they do not insist that the dishwasher cubbies receive the same treatment. This allows the cubbies to have floor coverings that are lower than the adjacent kitchen flooring. In this case, any water leaking from the appliances will be trapped out of sight.

Secondly, the flooring under the appliance must be as waterproof as the kitchen floor. Otherwise leaks can be absorbed through it to cause damage to the subflooring and/or framing. (I sometimes see scraps of flooring materials used under dishwashers. I also sometimes see that vinyl floor coverings are extended only past the toe-kick panels—thinking that the rest of the subflooring or underlayment under the appliance won't be seen. If several pieces of inlaid vinyl are to be used under the dishwasher, their joints should be sealed as carefully as they would be out on the visible portions of the kitchen floor.

Additionally, if the flooring throughout the kitchen is of hardwood, I suggest applying the same fillers and finish to the portion that is under the dishwasher (to prevent water from being able to easily seep down between individual flooring boards).



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Pocket Doors

Try to remember that pocket doors slide into "pockets" in their respective walls ... leaving very little room (if any) for nails or screws for wall hangings. Exercise extreme caution whenever making any penetrations in the wall panels near pocket doors. (I've seen too many door panels with holes or with long scratches due to lack of foresight.)

Hinge-Mounted Doorstops

I suggest considering the removal of all hinge-mounted doorstops, wherever possible. This type of doorstop can apply extreme point loads to door surfaces—all too often punching through the "skins" of hollow-core doors. (However, if this style is the only kind that will work in a given situation, then I suggest applying one to each hinge pin and adjusting them all to share the loads, equally.) Brass self-adhesive plates are also available for door surfaces to spread the point loads over slightly larger areas, or to "patch" door skins that have become damaged by this type of doorstop.

Some newer hinge-mounted doorstops have been designed to transfer their point loads back onto the hinge plates, rather than onto weak door skins. However, I find many hinges bent because of these.

Freeze-Proof Hose Valves

The type of sill cocks (exterior valves for garden hoses) provided at this property are designed to allow all water to drain from their barrels each time the water is shut off. This allows all water that would otherwise be exposed to freezing air temperatures in the winter to drain away safely before it can freeze and expand to cause damage to the piping inside or behind the wall.

However, in order for this type of hose connection to function correctly, any hoses or other obstructions such as additional valves must be removed during cold weather to allow the valve barrel to freely drain when the valve is shut off. (The valves are designed to be mounted so that their barrels slope towards the exterior enough to effectively drain.)

If hoses are inadvertently left attached during freezing weather, one can check for possible freeze damage after the piping is thawed by placing a tight-fitting cap over its hose bib and turning the valve on. If any water sprays or leaks out either to the exterior or into the crawl spaces or wall cavities around the freeze-proof barrel, the valve must be replaced as soon as possible. (This type of water leak will occur only when the valve is in use.)



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Roof Valleys and Gutters Over Sloped Shingled Roofs.

Since the roof of this house is prone to collect tree debris, I suggest that the valleys and gutters be cleaned seasonally. If too much tree debris is allowed to stand in the valleys, the shingles may let water through into the attic or living spaces. If the gutters become too full of tree debris, water may leak back under the shingles along the eaves to damage the fascia, soffits, or living spaces.

Cedar Shakes

Cedar shakes typically age by accumulating the effects of any combination of the following conditions: a) erosion from sun, rain, and wind—forming thin spots that eventually turn into holes, b) cupping, c) curling, d) splitting ... referred to as "brooming" in the more severe cases, e) sliding downward out of position, f) breaking and falling (or blowing away), and g) becoming lighter colored and grayer with age.

As most of the above conditions inevitably progress, the underlying tarpaper (called roofing felt) becomes exposed to the elements. Whenever felt is exposed to sunlight and weather for longer than 3 to 5 years, it embrittles and begins to fail—letting rainwater through it.

I suggest covering all instances of exposed felt with brown sheetmetal "slip shingles" (about 6"x10", each) at 3-year intervals throughout the remaining useful life of this cedar shake roof once it starts to become exposed.

The slip shingles can be slid up and under the existing shakes until their bottom edges align with the bottom edges of the shakes under which they are being placed. In this manner, they become essentially invisible from the ground. These slip shingles will usually stay in place by friction, alone— no nails needed. If desired, the bottom corners can be bent downward to dig into the wooden shakes.

A pair of tin snips is handy to carry to the rooftop to help shape the slip shingles to get around nails. They are also handy for tapping the slip shingles into place.

I also like to make a little "platform" from two pieces of wood that form a level surface for the small bundles of slip shingles that must be carried around the rooftop during this type of maintenance. This small platform allows a person to set the bundles of slip shingles down temporarily without them sliding off the rooftop.

Many roofing contractors subscribe to this method of ongoing maintenance; but some prefer to use actual cedar shakes or shingles. If wood repair shingles are to be used, only knowledgeable roofers should insert them, as the underlying felt can be too easily damaged by these thicker pieces.

While the metal slip shingles are very inexpensive and easy to correctly install, roofing contractors will tend to include additional charges to cover the business costs of implied warranties whenever they make such repairs to any roof, rather than being asked to replace it. Therefore, expect the costs of having roofing contractors install slip shingles to be far greater than the costs of having handymen or other capable individuals do the same work.



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It may be wise to consider treating these shakes with a preservative to extend their useful life. As cedar shakes are generally becoming more expensive and of declining quality, the capital investment of treatment begins to become more economically attractive.

Cedar Shake Roofs with Nearby Trees

The proximity of trees to this cedar shake roof poses special problems in annual maintenance. The trees can contribute quite a lot of debris, which tends to collect between the individual shakes. This debris holds moisture into the wood, which can eventually lead to dry rot damage. I suggest keeping the debris swept out of the spaces between the shakes on a seasonal basis, if possible ... especially in the more shaded areas or on the north slopes that tend to get less direct sunlight that would otherwise help dry the roof between wet periods.

Tree Pruning Near Roof Surfaces.

This property has trees with branches that will need to be pruned on a regular basis to avoid long-term damage from wind action of their branches upon the roof surfaces.

Plastic Attic Vents

Many styles plastic attic vents are found to develop cracks due to constant exposure to ultraviolet sunlight by the time they've been in place six to eight years. If these cracks advance up the sides of their "necks", then wind-driven rains can enter the attic in concentrated streams that are known to saturate even 16 inches of insulation and reach the ceiling sheetrock. When this happens, the water usually flows to the most nearby taping joint where enough damage is done that retexturing and repainting of entire ceiling areas are required.

I suggest inspecting the plastic attic vents on this house at least annually. If any cracks form anywhere in any of the vents, I suggest replacing all the vents at the same time with equivalent stamped sheetmetal units.

A homeowner, handyman, or roofer can rather easily do this. Each vent requires only one roofing nail near each bottom corner to hold it in place. One can easily see how they're installed by studying the existing vents before their removal. The sheetmetal replacement vents typically cost from \$10 to \$12, each, come in a number of popular colors, and take about 5 minutes, each, to install. (If a roofer installs them, they typically charge an extra \$10 to \$15 per vent for their labor.)



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Rust Stains on Concrete from Water

If water available for irrigation has a lot of iron (ferric ions) dissolved in it or rust (ferric oxide) particles suspended in it, constant watering of adjacent lawn or landscaping areas may result in reddish brown deposits accumulating on the concrete from the nearly unavoidable overspray. Although these stains are difficult to remove, they tend to wear away in time if something can be done to minimize the repetitive wetting of the concrete. Often times, an adjustment of the landscaping and/or sprinkler system will help.

One can install decorative boarders adjacent to the concrete flatwork of the driveways, walkways, patios, etc. that don't require watering and which provide enough separation to eliminate most of the occasional overspray.

The rust-colored stains, themselves, can usually be greatly reduced (if not eliminated) by treating them with chemical cleaners designed for that purpose. The most effective product I've seen so far for removing these stains is made by Behr®. It's their Concrete Etchant and Rust Remover. However, several applications and much scrubbing with a stiff bristled brush may be required.

Rust Stains on Concrete from Fertilizer

Some pelletized fertilizers containing iron will leave small rust-colored stains if not swept off concrete driveways, sidewalks, or patios before the next rain or sprinkler operation. I recommend sweeping or vacuuming all fertilizer pellets off concrete surfaces immediately after application.

If rust-colored stains from these sources are already present, they can often be successfully removed with Behr® Concrete Etchant and Rust Remover. However, several applications and much scrubbing with a stiff bristled brush may be required.

Radiator or Battery Acid Stains on Concrete

Radiator water or battery acid leaks from vehicles tend to leave rust-colored stains on concrete driveway surfaces. These are usually very difficult to remove.

However, if stains from these sources are present, they can often be successfully removed with Behr® Concrete Etchant and Rust Remover. However, numerous successive applications and much scrubbing with a stiff bristled brush will most likely be required. Nonetheless, be patient, as this product will eventually remove the stains. (Other similar concrete stain removal products may also be effective.)



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Small Shrinkage or Settling Cracks in Sheetrock Surfaces

It is completely normal for houses to acquire small cracks here and there in sheetrock surfaces due to initial settling and shrinkage. Usually, these cracks will begin appearing within the first year; and 90 percent of their total eventual movement will have occurred within the first 3 to 5 years.

The homeowners can usually very satisfactorily fill these cracks with matching painters caulking. (Elmers[®] makes painters caulking in several colors that may match some of today's typical wall colors.) The matching caulking should be pressed as deeply as possible into the cracks, but all excess caulking should be immediately wiped from the surrounding surfaces with a damp towel. In this manner, the visibly contrasting black shadows of the cracks are eliminated, making them essentially disappear. (CAUTION: If excess caulking is left on the wall or ceiling surfaces next to the filled cracks, it will be too visible. Even a closely matching caulking color will appear very different if enough surface area is in view. Additionally, it won't reflect light the same as the adjacent paint; and its texture won't match, either. The patch would appear "over-worked".)

Draw-String Window Coverings

Any of the popular window coverings that incorporate drawstrings to raise and lower them can be operated in a manner that will greatly extend their expected lives. Rather than using only the tension of the draw strings for raising the window coverings, one may do most of the lifting by placing one hand under the center of the window covering's bottom rail to support most of the weight while simultaneously keeping only mild tension on the draw strings. In this manner, the window coverings are not raised by the strings, but only held in place by the strings.

Conversely, when wishing to lower the coverings, one may hold the drawstrings in their "release" positions with only very slight tension. Then, rather than applying enough downward tension on the strings to cause the locking cams to release, one can gently lift the center of the bottom of the window coverings to release the cams. In this manner very little actual tension is required on the drawstrings to release the cam.

By following the procedures outlined above, very little wear occurs on the draw strings as they follow around their pulleys, and very little "tugging" is done on the window covering's attachment hardware to the window casings or walls. The window coverings will last much longer. I suggest teaching all occupants in a home to use these techniques.

Insurance Industry's C.L.U.E. Reports

The insurance industry maintains a database of risk factors associated with individual clients and with certain properties. The database functions much like a credit report. Most of the risk factors are associated with the financial habits of individuals; but some important data stays with the house. For



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instance: If a house has had a water damage claim, the insurance underwriters may be afraid of future claims deriving from molds or mildews.

This database is known as the C.L.U.E. (Comprehensive Loss Underwriting Exchange). The acronym is a clever play on words, as it pertains to giving insurance companies a "clue" regarding risks that could lower their profits.

Homeowners should know that whenever they file a claim (or even call their insurance company to inquire as to whether they should file a claim) the information they give over the phone is most likely being entered into the C.L.U.E. database. This information can have grave and lasting negative effects on future insurability. For this reason, the insurance departments and commissioners of many states are taking proactive roles in educating consumers and in protecting them from misuse of these data. However, Idaho has not yet taken such action ... leaving consumers to protect themselves through self-education.

Therefore, I strongly urge homeowners, buyers, and sellers to think twice about disclosing any water damage to their insurance companies. (This includes fire damage, as many fires are put out with water ... which, of course, often leads to associated water damage.)

Overhead Garage Door Operator Safety Functions.

The newer-style multi-sectioned overhead vehicle doors in use at most homes today have a tendency to develop higher forces close to the bottoms of their travel than the older-style one-piece doors. This is due to a cam-like action that is developed by the drive linkages in the last few inches of downward travel.

In order for drive-force-sensitive stop-and-reverse safety functions to be effective when the bottoms of the garage doors are at the height of a child's head or chest, they must be set extremely light at the upper extents of their travel.

This often tends to cause the doors to stop and reverse because of the inherent friction in their tracks and rollers. By the time adjustments are made to allow the doors to travel fully closed without reversing from their own frictional forces, the forces that can occur without tripping the stop-and-reverse safety function in the last 4 inches of their travel can be too great to provide any real protection for children or small animals.

That's probably the main reason the industry has developed the electronic "eye" (or "light beam") sensors that have been included with most installations since 1993. These sensors can augment the relative safety of the traditional drive-force-sensitive functions by causing the drive motors to stop and reverse whenever the light beam is interrupted while the door is traveling downward.

However, I see all too many of these electronic "eyes" being installed at heights much greater than those of a child's head or chest. This could conceivably allow a child or small pet to lay upon the floor beneath the light beam without tripping that function … leaving only the older-style, relatively insensitive, safety function remaining in effect.

Some people have been tempted to raise the levels of the electronic "eyes" high enough that cars cannot be parked halfway in and out of garages (where the light beams would simply shine under the cars, between their front and rear wheels, for instance). This certainly provides more protection for the



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cars; but severely reduces the protection for children and small animals. I strongly discourage this practice.

I suggest that any electronic "eyes" installed as safety features on garage door operators be installed at heights no greater than 4 inches above the floor.

I further recommend that the drive-force-sensitive safety features be set to barely allow the doors to drive downward without stopping and reversing upon their own friction. (This adjustment should be checked every month or so, as the settings will tend to "creep".)

As a final word: The only truly safe way to operate automatic garage doors is to watch them travel fully open and closed. Children should not be allowed to operate these appliances without adult supervision.

Sprinkler Controller Backup Batteries.

Automatic sprinkler controllers designed to hold their customized programs in solid-state memory usually lose their programming whenever the power source to their memory is interrupted. These controllers require the implementation of "backup" batteries. Although the controllers are not designed to allow actual operation of the sprinkler system during power outages, they can at least save the custom programs stored in their memory and keep track of the correct time and dates during most power outages. (This is a great way to ensure that your custom timing and scheduling has not been interrupted, changed, or forgotten because of a power outage.)

However, to ensure that the backup batteries remain fresh enough to do their job, I suggest replacing them each fall when the sprinkler system is "winterized". (They can be replaced while the main power source is still available to the controller without fear of losing the program.)

It's a good idea to place a chart of any custom program schedules near the controller. It's also a good idea to keep a map of the zones and sprinkler head locations near the controller. The map should also show the locations of all the solenoid control valves, the stop-and-drain valves, and the backflow prevention valve. (This information is invaluable to sprinkler contractors, plumbers, lawn maintenance personnel, or even friends who may have to operate the system in your absence.)

Winterizing Sprinkler Systems.

This climate produces freezing weather as early as mid-November, with frosts typically occurring into early April each year. For this reason, it's best to "winterize" the sprinkler systems each fall to protect them from freeze damage.

This is done by closing the main stop valves and blowing compressed air through each of the zones, in turn, (usually using the automatic controller to sequentially open the zones) until nothing but clear air emerges from the sprinkler heads.

Most systems also have a drain valve located near the stop valve that can help let any trapped water in that section of piping out into the soils through a gravel sump around the valve.



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The backflow prevention valve manifolds usually have one or more drain valves located on them, also. It's very important to ensure that all water is purged from all components of the system, which are within 3 feet of the ground surfaces.

Backflow Prevention Valve Codes and Inspections.

The State of Idaho requires all irrigation systems that are in any way connected to domestic water systems (including underground aquifers, by means of private wells) to have adequate means of preventing contamination of their associated domestic water sources. The state publishes detailed specifications for the design, installation, and performance of the required backflow prevention valves.

Idaho requires that certified inspectors inspect all existing backflow prevention valves, annually. The state and the local water providers have the right to immediately discontinue service to any point of final use that is not in compliance. (However, normally, some notice is given along with a reasonable time to comply.)

It is fair to note that enforcement of these laws has been sporadic and inconsistent, which explains why so many Idaho citizens are yet unaware of any need to comply. However, once an address is listed in the state's records as requiring backflow prevention, it is more likely that annual inspections will be tracked and compliance enforced.

The numerous older-styles of anti-siphon loops with ball-check valves and many other older backflow prevention devices that are no longer in compliance with today's codes cannot be accepted as "legal". There are no "grandfather" rights when it comes to public safety.

Further information about backflow prevention valves can be obtained from the State of Idaho Department of Environmental Quality (DEQ) at (208) 373-0413.

Self-Closing Garage-House Entry Doors.

Since most fires are known to originate in garages (because of the types of flammable chemicals typically stored in them), fire insurance companies have continually lobbied for greater improvements in the "fire barriers" between garages and adjacent parts of homes.

Garage doors must now not only be rated as "fire doors" with at least a ¹/₂-hour fire rating; but they must also be designed to self close and successfully self-latch when released from a fully open position. This is usually accomplished by the installation of spring-loaded hinges.

However, many people seem to find the self-closing hinges to be a nuisance when carrying multiple sets of packages into the house from the garage. For this reason, I find that many garage-house entry doors have hinge springs that have been purposely relaxed.

I suggest, instead, that people install drop-down rubber stops that can be easily operated with one foot ... even while one's hands are full. These simple devices are inexpensive and easy to install. Their installation and use can avoid the typical frustrations of self-closing safety features, while maintaining the important fire barrier aspects of the doorway.



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Soils Settling Next to Foundation

When foundations are made, the earth is excavated beyond the boundaries of the actual foundation to allow room for the forms. After the forms are removed, the trenches are gently backfilled so as not to threaten the relatively uncured, weak concrete. As a result, most finish grading will settle noticeably within the first few feet of any foundation during the first 5 years after construction.

After this initial setting has occurred, homeowners may find that the ground surfaces that originally sloped away from their foundations now slope towards them. If this is the case, I strongly recommend periodic inspection of adjacent crawl spaces for possible exterior surface water entry. If waters from rains or irrigation begin entering the crawl spaces due to inadequate grading of the soils next to the foundation, then corrections must be made.

If corrections are needed, the loose topsoil, landscaping materials, shrubs, plants, and any sprinkler system components should first be removed to expose the underlying "subgrade" of native earth that was used to originally backfill the footing trenches. Once the underlying soils are exposed, they should be further compacted with vibrating machinery as much as possible.

After that, additional similar soils should be added in 3-inch "lifts" and carefully compacted until the maximum slope away from the foundation can be achieved. (Note: At least several inches of clearance should be maintained between the bottom edges of siding and the tops of the finish grading.)

Once fresh, clean soils are properly placed in the footing trenches to bring them up to adequate slopes away from the house, the topsoils, landscaping materials, plants, shrubs, sprinkler components, etc. can be reinstalled.

Removing Yellowish-Brown Deposits from Dishwasher Interiors

Rust-colored or yellowish, orange, or brown stains that often build up inside dishwashers can usually be removed by allowing the appliance to cycle through one or more full, "normal" washes with the soap container filled with either citric acid crystals or with oxalic acid crystals. The citric acid or oxalic acid crystals can be purchased through most pharmacies. A good source of citric acid crystals can also be found in the orange-flavored drink, Tang[®] (available in most grocery stores) at a lower price.

Avoiding Baked-on Food Soils in Oven Door Viewing Panels

I often see brown streaks of baked-on food soils deposited on the inner layers of glass-paneled oven doors. Once food soils get inside the oven doors, disassembly of the doors is required to access the surfaces to remove the stains.



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To avoid this problem, I suggest being aware that cleaning fluids can easily enter the interior of oven doors through their edge seams and especially through their latch lever holes which are provided for the "self-cleaning" functions. Since the "self-cleaning" processes do not reach any food soils deposited beyond the oven door's flexible seals, homeowners usually need to clean these perimeter surfaces separately with a strong detergent. I encourage the homeowners to wring all excess moisture from their cleaning rags before attempting to scrub these surfaces. Any water or detergents that get into the oven door may look clear at first (as they run down the inner glass surfaces), but any organic soils dissolved or suspended in the water will eventually darken and become baked on.

Importance of GFI Devices

Over the past 40 or so years, the electrical code authors have begun to recognize the importance of increased protection against inadvertent small electrical shocks due to ground faults. Physiologists have discovered that electrical currents as small as 30 to 60 milliamps per square centimeter passing through a heart muscle can cause fibrillation. This is probably the most serious condition that electrical currents can produce. Once a heart goes into fibrillation, it usually requires a defibrillator to save the patient. (Most of us don't have this type of equipment nearby.) Ironically, if greater amounts of current pass through the heart muscle, it's far more likely that the heart will simply spasm in response to the shock and then regain its normal rhythm.

Research has found that older people and persons with unsound hearts are much more susceptible to small shocks that might be below the threshold of perception of younger, healthier people. For this reason, it's quite possible that a malfunctioning appliance in a home could be creating small shocks that don't bother one user, but which could kill another user.

The electrical industry has addressed this danger by requiring the installation of protective devices (commonly known as GFI's, for Ground Fault Interrupters) to serve all outlets that are within six feet of plumbing fixtures or major appliances likely to have exposed surfaces directly connected to ground. Outside outlets and outlets over bare concrete surfaces are also required to have this type of protection.

These GFI devices are usually set to open (trip) a circuit if an imbalance of current flow between the "hot" and "neutral" conductors greater than 10 milliamps is measured. While some of these devices are incorporated into GFI-type circuit breakers, the more modern implementation is the use of GFCI (Ground Fault Circuit Interrupting) duplex receptacles ... the outlets having special "test" and "reset" buttons.

The GFCI outlets were originally designed for use on fully grounded circuits, i.e., circuits having a black, white, and a bare ground conductor. However, these outlets can also be appropriately applied to ungrounded circuits. (This is a little-known fact within much of the industry, which otherwise appears to be in conflict with the general rule about allowing only 2-hole outlets ungrounded circuits.)

NOTE: The locations and degree of implementation of GFI-type devices has changed dramatically over the past 30 or so years, according to codes adopted by various authorities. (One cannot expect all older houses to be in compliance with today's codes.)



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Making Incandescent Light Bulbs Last Longer

Have you ever noticed that light bulbs seem to burn out just when you turn them on? That's because their frail filaments are hit hard and suddenly by a large burst of voltage and current every time conventional switches turn them on. Those forces actually cause them to be "jarred" physically. (Sometimes, in a quiet room, you can actually hear the filaments sound like a released spring in response to the sudden energy put to them.)

To reduce the amount of unnecessary stresses that switches can place on light bulb filaments, I suggest considering the incorporation of what some people call "soft switches". These are any number of solid-state dimmer devices that allow the lights to be turned on gradually, instead of simply "slamming" them with the sudden forces that most contacts create. Any dimmer switch that forces the user to move a dial or toggle through a continuously increasing range of voltage or current in order to get the fixture to its fully "on" position each and every time the light is turned on could be considered as a "soft switch". (Any style of rotating-dial dimmer switch with a push-push on/off action, or a slide control in combination with a rocker switch that allows the dimming level to be set, but yet also allows a separate "on/off" action does not qualify as a "soft switch".)

I suggest incorporating soft switches especially wherever expensive light bulbs are used, or where light bulbs are exceedingly difficult to access (such as at high ceilings or over stairways). The use of soft switches can extend bulb life by as much as a factor of 5 or 10.

Refrigerators and Freezers on GFI-Protected Circuits

Most garages built after 1976 have GFI-protected outlets. Other garages and exterior storage rooms are often subsequently "upgraded" with GFI-type protection. If refrigerators or freezers are plugged into these outlets they can sometimes cause "nuisance" trips of the protective devices. This can lead to food spoilage if the tripped conditions manage to go unnoticed for too long.

I suggest placing refrigerators or freezers in garages (or for other locations that may be protected by GFI-type devices) only upon non-GFI outlets. Usually, a qualified electrician can provide such an outlet in these locations with very little alteration of the existing circuits.

Loose Door Knobs and Door Pulls

When the surface plates (escutcheons) of doorknobs and closet door pulls are allowed to slide loosely around on finished surfaces, the surfaces are often damaged. Therefore, I suggest keeping all hardware tightly secured to avoid such damage.



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Laundry Valves

Since most washing machine hoses will eventually fail, it is wise to close the supply valves to which they are connected after each appliance use. For many homeowners, this would seem to be very inconvenient ... especially if the valves are hard to reach behind the washing machine or require many turns to operate. However, in these cases it would still be appropriate to turn the valves off during long periods of non-use, such as during vacations, etc.

Alternatively, some modern valve stations are made with simple globe valves that require only one-quarter turn for their full range of motion. Some valves are also available with a single lever to control both hot and cold valves simultaneously. It might be advisable to consider replacing existing valves with these newer types to promote the habit of turning them off between laundry uses.

If easier valves are not a ready option, it may be prudent to employ only the more expensive, steel-reinforced washer hoses to help reduce the chances of flood damage.

Cleaning Tops of Baseboard Moldings

When dust collects along the tops of light-colored baseboard moldings it often forms unsightly dark lines. Many people make the mistake of attempting to remove the dust with rags wetted with various dusting products containing oils, water, or alcohols. However, when the dust is wetted, it tends to turn to "mud" which will then need to be scrubbed from the surfaces.

Instead, I suggest avoiding this problem by removing the dust buildup with a vacuum appliance having an upholstery brush attachment at the end of its suction hose. (The brush helps dislodge the dust so it can be easily vacuumed away.)

Cleaning Bugs Out of Silhouette® Window Blinds

The cellular spaces between the front and back faces of the sheer polyester fabric and its interposed slats can provide places for flies, spiders, and other annoying bugs to crawl into and die. These little critters usually present dark imperfections in the otherwise clean appearance of the sheer fabrics as light shines through them. However, there is a rather easy way to clean the interiors of these spaces.

I suggest obtaining a section of straight plastic pipe about ³/₄ of an inch in diameter and cutting it to a length about one half the width of the widest Silhouette® blinds in the house. The pipe section may be temporarily taped to the end of a vacuum hose. The pipe is then inserted into the ends of the cellular spaces that need to be "debugged". (It may be necessary to cut a slit or two through the taped junction between the pipe and the vacuum hose in order to reduce suction pressure at the end of the pipe just enough to avoid collapsing the fabric around the end of the vacuum extension.)



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Using Unfinished Attic Spaces for Storage

The open truss or rafter framing found in most unfinished attics will not provide surfaces capable of withstanding loads required for storage activities. The danger is that people might inadvertently step through sheetrock or plaster ceilings, thereby causing property damage or personal injury. I suggest installing solid wood plank flooring or at least ½-inch plywood sheeting to span the framing members before attempting to walk in unfinished attics. Likewise, stored personal items should never be placed so their weight is applied directly to sheetrock or plastered ceiling surfaces. Such loads should always be applied to the framing members. Additionally, it would be wise to have an architect or engineer determine the amount of weight that can be safely placed on ceiling framing in any attic. Furthermore, if attic storage space is made over living spaces, care should be taken to avoid degrading the insulation needed for energy efficiency.



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