

ASE Maintenance and Light Repair (G1) Task List Correlation Chart

The following chart correlates the *Modern Automotive Technology* textbook (©2017) to the ASE Maintenance and Light Repair (G1) Task List.

Task Number and Description	Page Numbers
A. Engine Systems (9 questions)	
1. Verify driver's complaint and/or road test vehicle; determine necessary action. Utilize service manuals, technical service bulletins (TSBs), and product information.	109–115, 138, 988–990, 1328–1329
2. Inspect engine assembly for fuel, oil, coolant, and other leaks; determine necessary action.	137, 141–146, 150–151, 705–716, 735, 745, 755, 764, 766, 860–865, 873–877, 879, 912–920, 1289, 1325–1328, 1333, 1563, 1628–1629
3. Check for abnormal engine noises.	151, 524, 528–529, 745–746, 787, 818, 825–826, 861, 912, 988, 991–997, 1026, 1028, 1047–1049, 1245–1251, 1288, 1325–1327, 1357–1358, 1427–1429
4. Inspect and replace pans and covers.	919–922, 1060–1062, 1179–1182, 1188–1189, 1195–1196, 1211–1213
5. Change engine oil and filter; reset oil life monitor.	138–141, 146–147, 149, 153, 917–919, 925
6. Inspect and test radiator, heater core, pressure cap, and coolant recovery system; determine needed repairs; perform cooling system pressure and dye tests.	144, 151–153, 859–884, 1697–1717
7. Inspect, replace, and adjust drive belt(s), tensioner(s), and pulleys.	237–238, 878–879, 1176–1179, 1185–1189, 1564
8. Inspect and replace engine cooling system and heater system hoses, pipes, and fittings.	859–884, 1714–1716
9. Remove and replace engine thermostat and coolant bypass.	847–848, 870–872
10. Inspect and test coolant; drain, flush, and refill cooling system with recommended coolant; bleed air as required.	144, 862–865, 879–881
11. Inspect and replace accessory belt driven water pumps.	839–841, 867–869
12. Confirm fan operation (both electrical and mechanical); inspect fan clutch, fan shroud, and air dams.	877–878
13. Verify operation of engine-related warning indicators.	302–307, 381–390, 399–411, 415–428, 625–626, 1003–1020
14. Perform air induction/ throttle body service.	82, 726, 973–975

Task Number and Description	Page Numbers
15. Inspect, service, or replace air filter(s), filter housing(s), and intake system components.	146–147, 715–716, 973–975
16. Inspect and replace crankcase ventilation system components.	904, 935–937, 960, 962, 968–972
17. Inspect exhaust system for leaks; check hangers, brackets, and heat shields; determine needed repairs.	798, 800–805
18. Retrieve and record diagnostic trouble codes (DTCs).	303, 401, 403–411, 747–748, 1003–1005, 1018–1020
19. Remove and replace spark plugs; inspect secondary ignition components for wear or damage.	523–533
20. Inspect fuel tank, filler neck, fuel cap, lines, fittings, and hoses; replace external fuel filter.	150–151, 696–716, 743–760, 785–794
21. Inspect canister, lines/hoses, mechanical and electrical components of the evaporative emissions control system (EVAP).	937–940, 964–968
22. Check and refill diesel exhaust fluid (DEF).	138, 689
B. Automatic Transmission/Transaxle (4 questions)	
1. Road test the vehicle to normal operation; retrieve and record diagnostic trouble codes (DTCs).	303, 401, 403–411, 747–748, 1003–1005, 1018–1020, 1328–1329
2. Determine fluid type, level, and condition.	138, 141–142, 1327–1328, 1331–1333
3. Inspect transmission for leaks; replace external seals and gaskets.	138, 141–142, 1327–1328, 1331–1333
4. Inspect and replace CV boots, axles, drive shafts, U-joints, drive axle joints, and seals.	1325–1327, 1331, 1333–1339
5. Visually inspect condition of transmission cooling system, lines, and fittings.	138, 144, 860–861, 879, 1327–1328, 1331–1333, 1335–1339
6. Inspect and replace power train mounts.	1333–1339, 1358–1359, 1438
7. Replace fluid and filter(s).	138, 141–142, 1327–1328, 1331–1333
C. Manual Drive Train and Axles (6 questions)	
1. Inspect, adjust, replace, and bleed external hydraulic clutch slave/release cylinder, master cylinder, lines, and hoses; clean and flush hydraulic system; refill with proper fluid.	138, 143, 1290–1292
2. Inspect and replace power train mounts.	1290–1295, 1358–1359, 1438
3. Inspect, adjust, and replace transmission/transaxle external shifter assembly, shift linkages, brackets, bushings/grommets, pivots, and levers.	1288–1295
4. Inspect and replace external seals.	1292
5. Check fluid level; refill with fluid.	138, 143, 1289
► Drive Shaft, Half-Shaft, and Universal Joints/Constant Velocity (CV) Joint (Front- and Rear-Wheel Drive)	
6. Road test the vehicle to verify drive train noises and vibration.	151, 988, 1028, 1328–1329, 1357–1358, 1387, 1427–1429

Task Number and Description	Page Numbers
7. Inspect, service, and replace shafts, yokes, boots, universal/CV joints; verify proper phasing.	1265, 1270, 1301–1302, 1306, 1343–1350, 1357–1363, 1390–1394, 1409, 1411, 1417, 1419–1423, 1431–1438
8. Inspect, service, and replace drive shaft center support bearings.	1348–1349, 1357–1358, 1360
9. Inspect, service, and replace wheel bearings, seals, and hubs, excluding press-type bearings.	1467–1484
► Rear-Wheel Drive Axle Inspection	
10. Identify fluid leakage problems.	138, 151, 1389
11. Inspect, drain, and refill with lubricant.	138, 1392, 1394
12. Inspect and replace rear axle shaft wheel studs.	1392–1394
13. Inspect axle housing and vent; inspect rear axle mountings.	1388, 1392–1395
► Four-Wheel Drive	
14. Inspect, adjust, and repair transfer case manual shifting mechanisms, bushings, mounts, levers, and brackets.	1363–1364
15. Check transfer case fluid level and inspect condition; drain and refill with fluid.	1363–1364
16. Inspect, service, and replace front drive/propeller shaft and universal/CV joints.	1359–1362
17. Inspect front drive axle universal/CV joints and drive/half shafts, axle seals, and vents.	1358–1362
18. Inspect front wheel bearings, seals, and hubs.	1467–1484
19. Inspect transfer case, front differential, and axle seals and vents.	1358–1364
20. Inspect tires for correct size for vehicle application; check for wear.	1467–1484
21. Retrieve and record diagnostic trouble codes (DTCs).	303, 401, 403–411, 1003–1005, 1018–1020, 1428
D. Suspension and Steering (13 questions)	
1. Disarm airbag (SRS) system.	1743–1745
2. Check power steering fluid level; determine fluid type and adjust fluid level; identify system type (electric or hydraulic).	138, 144–145, 1563, 1568–1571
3. Inspect, adjust, and replace power steering pump belt(s), tensioners and pulleys; verify pulley alignment.	1562–1564, 1571
4. Identify power steering pump noises, vibration, and fluid leakage.	138, 144–145, 151, 1562–1563, 1568, 1571
5. Remove and replace power steering pump; inspect pump mounting and attaching brackets; remove and replace power steering pump pulley; transfer related components.	1547, 1571

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6. Inspect and replace power steering hoses, fittings, O-rings, coolers, and filters.	1568–1571
7. Inspect and replace rack and pinion steering gear bellows/boots.	1566–1568
8. Flush, fill, and bleed power steering system.	1571
► Steering Linkage	
9. Inspect, adjust (where applicable), and replace pitman arm, center link (relay rod/ drag link/intermediate rod), idler arm(s) and mountings.	1538, 1542–1543, 1565–1566
10. Inspect, replace, and adjust tie rods, tie-rod sleeves/adjusters, clamps, and tie-rod ends (sockets/bushings).	1543, 1565–1566
11. Inspect and replace steering linkage damper(s).	1543, 1565–1566
► Front Suspension	
12. Identify front suspension system noises, handling, ride height, and ride quality concerns; disable air suspension system.	1513–1514, 1516
13. Inspect upper and lower control arms, bushings, and shafts.	1522–1527
14. Inspect and replace rebound and jounce bumpers.	1514–1516
15. Inspect track bar, strut rods/radius arms, and related mounts and bushings.	1522–1527
16. Inspect upper and lower ball joints (with or without wear indicators).	1519–1522
17. Inspect non-independent front axle assembly for damage and misalignment.	1482–1483, 1515–1516, 1518, 1527, 1577
18. Inspect front steering knuckle/spindle assemblies and steering arms.	1566–1567
19. Inspect front suspension system coil springs and spring insulators (silencers).	1517–1518
20. Inspect front suspension system leaf spring(s), leaf spring insulators (silencers), shackles, brackets, bushings, center pins/bolts, and mounts.	1517–1518
21. Inspect front suspension system torsion bars and mounts.	1518
22. Inspect and replace front stabilizer bar (sway bar) bushings, brackets, and links.	1499, 1513–1514, 1523–1524, 1536
23. Inspect front strut cartridge or assembly.	1525–1526
24. Inspect front strut bearing and mount.	1513–1514, 1525–1527, 1536
25. Identify noise and service front wheel bearings/hub assemblies.	1467, 1470–1471, 1480–1484, 1513–1514
26. Identify rear suspension system noises, handling, and ride height concerns; disable air suspension system.	1470–1471, 1513–1514, 1516

Task Number and Description	Page Numbers
27. Inspect rear suspension system coil springs and spring insulators (silencers).	1500–1503, 1517–1518
28. Inspect rear suspension system lateral links/arms (track bars), and control (trailing) arms.	1499, 1513–1514, 1522–1524, 1565–1566
29. Inspect and replace rear stabilizer bars (sway bars), bushings, and links.	1499, 1513–1514, 1523–1524, 1536
30. Inspect rear suspension system leaf spring(s), leaf spring insulators (silencers), shackles, brackets, bushings, center pins/bolts, and mounts.	1517–1518
31. Inspect and replace rear rebound and jounce bumpers.	1514–1516
32. Inspect rear strut cartridge or assembly, and upper mount assembly.	1525–1526
33. Inspect non-independent rear axle assembly for damage and misalignment.	1482–1483, 1515–1516, 1518, 1527, 1577
34. Inspect rear ball joints.	1519–1522
35. Inspect and replace rear tie rod/toe linkages.	1543, 1565–1566
36. Inspect rear knuckle/spindle assembly.	1566–1567
37. Inspect and replace shock absorbers, mounts, and bushings.	1513–1516, 1522–1527
38. Identify noise and service rear wheel bearings/hub assemblies.	1467, 1470–1471, 1480–1484, 1513–1514
► Wheel Alignment	
39. Identify alignment-related symptoms such as vehicle wander, drift, and pull.	1474–1478, 1527, 1581–1595
40. Perform pre-alignment inspection; prepare vehicle for alignment, and perform initial wheel alignment measurements.	1474, 1581–1589
41. Measure front and rear wheel camber; adjust as needed.	1583–1584, 1589
42. Measure caster; adjust as needed.	1582–1583, 1589
43. Measure front wheel toe; adjust as needed.	1584–1585, 1589–1591
44. Center the steering wheel using mechanical methods.	1591
45. Measure rear wheel toe; adjust as needed.	1584–1585, 1589–1592
46. Measure thrust angle.	1585, 1589
47. Calibrate steering angle sensor.	1555, 1574, 1661, 1668–1669
► Wheel and Tires	
48. Identify tire wear patterns.	1467–1471, 1586–1589
49. Inspect tire condition, tread depth, size, and application (load and speed ratings).	1467–1468, 1471, 1586–1588
50. Check and adjust tire air pressure. Utilize vehicle tire placard and information.	1468–1472

Task Number and Description	Page Numbers
51. Diagnose wheel/tire vibration, shimmy, and noise concerns; determine needed repairs.	1470
52. Rotate tires/wheels and torque fasteners/wheel locks.	1472, 1476–1478
53. Dismount and mount tire on wheel.	1476–1478
54. Balance wheel and tire assembly.	1474–1476
55. Identify and test tire pressure monitoring systems (TPMS) (indirect and direct) for operation. Verify instrument panel lamps operation; conduct relearn procedure.	1479–1480
56. Repair tire according to tire manufacturer's standards.	1467–1478
E. Brakes (11 questions)	
1. Check for poor stopping, pulling, dragging, noises, high or low pedal, and hard or spongy pedal.	1625–1630
2. Check the master cylinder fluid level and condition; inspect for external fluid leakage.	1631–1634
3. Inspect flexible brake hoses, brake lines, valves, and fittings for routing, leaks, dents, kinks, rust, cracks, or wear; inspect for loose fittings and supports; determine needed repairs.	138, 145, 151, 1626, 1628–1629, 1634
4. Verify operation of brake warning light and ABS warning light; inspect brake system wiring damage and routing.	1659, 1662–1668
5. Test parking brake indicator light, switch, and wiring.	1602, 1619–1620, 1649
6. Bleed and/or flush hydraulic system.	138, 143, 1631–1634
7. Select, handle, store, and install proper brake fluids.	138, 145, 151–153, 1625–1626, 1629, 1631–1634
► Drum Brakes	
8. Remove, clean, inspect, and measure brake drums; follow manufacturer's recommendations in determining need to machine or replace.	1642–1649
9. Machine drums according to manufacturer's procedures and specifications.	1643–1644
10. Using proper safety procedures, remove, clean, and inspect brake shoes/linings, springs, pins, self-adjusters, levers, clips, brake backing (support) plates, and other related brake hardware; determine needed repairs.	1642–1649
11. Lubricate brake shoe support pads on backing (support) plate, self-adjuster mechanisms, and other brake hardware.	1645
12. Inspect wheel cylinder(s) for leakage, operation, and mounting; remove and replace wheel cylinder(s).	1631–1634, 1643–1644
13. Install brake shoes and related hardware.	1645–1649

Task Number and Description	Page Numbers
14. Adjust brake shoes and parking brake.	1648–1649
15. Check parking brake system operation; inspect cables and components for wear, rust, and corrosion; clean or replace components as necessary; lubricate and adjust assembly.	1649
16. Reinstall wheel, torque lug nuts, and make final brake checks and adjustments.	1473, 1648–1649
► Disc Brakes	
17. Retract integral parking brake caliper piston(s) according to manufacturer's recommendations.	1637–1638
18. Remove caliper assembly from mountings; inspect for leaks and damage to caliper housing.	1637–1638
19. Clean and inspect caliper mountings and slides/pins for wear and damage.	1637–1638
20. Remove, clean, and inspect pads and retaining hardware; determine needed repairs, adjustments, and replacements.	1634–1636
21. Clean caliper assembly; inspect external parts for wear, rust, scoring, and damage; replace any damaged or worn parts; determine the need to repair or replace caliper assembly.	1637–1638
22. Clean, inspect, and measure rotors with a dial indicator and a micrometer; determine the need to index, machine, or replace the rotor.	1638–1641
23. Remove and replace rotors.	1638–1641
24. Machine rotors, using on-car or off-car method.	1638–1641
25. Install pads, calipers, and related attaching hardware; lubricate components; bleed system.	1634–1641
26. Adjust calipers with integral parking brakes.	1637–1638
27. Fill master cylinder with recommended fluid; reset system; inspect caliper for leaks.	1631–1634, 1637–1638
28. Reinstall wheel, torque lug nuts, and make final brake checks and adjustments.	1473, 1641
29. Road test vehicle and burnish/break-in pads according to manufacturer's recommendations.	1669
► Power Assist Units	
30. Test brake pedal free travel with and without engine running to check power booster operation.	1607–1608, 1628–1630
31. Check vacuum supply (manifold or auxiliary pump) to vacuum-type power booster.	1607–1608, 1628–1630
32. Inspect the vacuum-type power booster unit for operation, and vacuum leaks; inspect the check valve for proper operation.	1607–1608, 1628–1630

Task Number and Description	Page Numbers
33. Identify operation of electric-hydraulic assist system; check system for leaks and operation.	1603–1604, 1607–1608, 1628–1630
34. Identify operation of hydro-boost assist system; check system for leaks and operation.	1608, 1628–1630
F. Electrical (8 questions)	
1. Disarm/re-enable air bag; verify lamp operation.	302–307, 403–411, 1743–1748
2. Check voltages, grounds, and voltage drops in electrical circuits; interpret readings.	304–305, 359–360
3. Check current flow in electrical circuits and components; interpret readings.	302–307, 347–360
4. Check continuity and resistances in electrical circuits and components; interpret readings.	302–307, 348–362
5. Perform battery tests (load and capacitance); determine needed service.	306, 497–498, 502–504
6. Maintain or restore electronic memory functions.	425–428
7. Inspect, clean, fill, or replace battery.	488–493, 499, 501–502, 504–506
8. Perform slow/fast battery charge in accordance with manufacturer's recommendations.	494–496, 502
9. Inspect, clean, and repair or replace battery cables, connectors, clamps, and hold-downs.	312–313, 448, 459–460, 475–476, 506–507, 527–528
10. Jumpstart a vehicle with a booster battery or auxiliary power supply.	496, 500
11. Perform starter current draw test; interpret readings.	525–526
12. Inspect switches, connectors, and wires of starter control circuits.	348–352, 363–365, 529–530
13. Remove and replace starter.	528–532
14. Perform charging system output test and identify undercharge, no charge, or overcharge condition.	551–555
15. Inspect, adjust, and replace generator (alternator) drive belts, pulleys, and tensioners.	558–559
16. Remove, inspect, and replace generator (alternator).	538–543, 545, 558–559
17. Inspect, replace, and aim headlights/bulbs and auxiliary lights (fog lights/driving lights).	616–617
18. Inspect interior and exterior lamps and sockets; repair as needed.	613–616
19. Inspect lenses; determine needed repairs.	614–615
20. Verify instrument gauges, warning/indicator light operation; reset maintenance indicators.	618–627
21. Verify horn operation; determine needed repairs.	631–632
22. Verify wiper and washer operation; replace wiper motor, blades, and washer pump as needed.	627–631

Task Number and Description	Page Numbers
G. Heating, Ventilation, and Air Conditioning (4 questions)	
1. Verify HVAC operation (vent temperature, blower and condenser fan, compressor engagement, blend and mode door(s) operation).	1697–1699, 1701–1707
2. Visually check A/C components for signs of leaks.	1706–1707
3. Inspect A/C condenser for restricted airflow.	1710
4. Inspect and replace cabin air filter.	146–147
5. Check drive belt for wear and tension; adjust or replace as needed.	1697–1698
6. Inspect and clean evaporator drains.	1708