

Table 5.9-(1)

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|--|------|--------------|----------------|------------------------------|--|--|--------------|-------------|
| Autonomous Maintenance Review Request | | | | Area / Team | | Submission date | Area manager | Team leader |
| Autonomous Maintenance Review Sheet | | | | Equip. Unit No. | | | | |
| Step 1: Initial Cleaning(Processing Equipment) | | | | Date requested for review | | Score: pt. | Pass | Fail |
| Review type | Self | Area Manager | Senior Manager | Actual date / Time of review | | Pass levels :Score = total score for 'equipment' (Review Items 1-5) + score for 'people' (Review Item 6) | | |
| | | | | Name of reviewer | | Self | Area M. | Senior M. |
| | | | | | | 90 or over | 85 or over | 80 or over |

| Review Item | Key Points to Review | Poor | Rather poor | Fair | Quite good | Good | Comments |
|---|--|---------------------|---|--|--|--|--|
| | | 1 pt. | 2 pt. | 3 pt. | 4 pt. | 5 pt. | |
| 1. Cleanliness of main body of equipment | -Dust, dirt, oil stains and waste all cleaned off, and materials and tools put neatly in order (jigs, chucks, sliding parts, chutes, frames, beds, pipes, wires, etc.)? | | | | | | |
| | -Looseness, play, vibration, friction and overheating eliminated (nuts, bolts, jigs, rotating and sliding parts, chutes, etc.)? | | | | | | |
| 2. Cleanliness of peripheral apparatus -Hydraulic, pneumatic, and water systems -Electrical control systems -Other | -Dust, dirt, oil stains and debris all cleaned off (cylinders, solenoids, FRLs, motors, limit switches, belts, proximity switches, photocells, control panel interiors/exterior, meters / gauges, etc.)? | | | | | | |
| | -Looseness, play, vibration, friction, buzzing and overheating eliminated (motors, solenoids, limit switch mounting plates, relays, wires, nuts, bolts, etc.)? | | | | | | |
| 3. State of lubrication | -Dust, dirt and oil stains all cleaned off (lubricators, oil pumps, level gauges, filler caps, supply pipes, etc.)? | | | | | | |
| | -Oil volumes and drip rates correct, and looseness, play, and vibration eliminated (contamination/degradation of oil itself, pipe joints, valves, gearboxes, oil temperature, etc.)? | | | | | | |
| 4. Cleanliness of equipment surroundings | -Tools, measuring instruments, and spare parts all organised correctly? | | | | | | |
| | -Guards, nameplates, labels, and other signs all displayed correctly? | | | | | | |
| | -Unnecessary objects removed, and correct products and parts kept in correct places? | | | | | | |
| 5. Contamination sources and hard-to-access areas | -Defective products clearly separated from good ones? | | | | | | |
| | -Aisles clear and tidy? | | | | | | |
| | -No scattering of dust/dirt from other equipment? | | | | | | |
| 6. Way in which TPM is being addressed | -Chart drawn up plotting all sources of dirt, dust and oil stains, and areas that are hard to clean? Plan formulated for dealing with these? | | | | | | |
| | -Improvements made to guards and cleaning tools? | | | | | | |
| | 'Checking through cleaning' being implemented? | | | | | | |
| 6. Way in which TPM is being addressed | -Cleaning areas clearly allocated? | | | | | | |
| | -Do all team members have a good understanding of what TPM means, and are they all fully involved in implementing it? | Points | 10 | 20 | 30 | 40 | 50 |
| Scoring key | Points | 1 point / 10 points | 2 points / 20 points | 3 points / 30 points | 4 points / 40 points | 5 points / 50 points | |
| | 1-5 | Equipment | Hardly implemented at all | Only implemented in obvious places | Implemented in specific locations (e.g. sliding parts, chutes) | Also implemented in more difficult and less obvious places | Full 'checking through cleaning' achieved, an difficult areas starting to be addressed |
| 6 | People | No interest at all | Only maintenance staff and supervisors active | Operators taking part, but doing the easy tasks only | Operators doing nearly all the work | Responsibilities clearly defined, and everything being done properly | |

Table 5.9-(2)

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|--|------|--------------|----------------|------------------------------|--|--|--------------|-------------|
| Autonomous Maintenance Review Request | | | | Area / Team | | Submission date | Area manager | Team leader |
| Autonomous Maintenance Review Sheet | | | | Equip. Unit No. | | Score: pt. | Pass | Fail |
| Step 2: Contamination Sources and Hard-to-Access Areas(Processing Equipment) | | | | Date requested for review | | Pass levels :Score = total score for Review Items 1- 6 | | |
| Review type | Self | Area Manager | Senior Manager | Actual date / Time of review | | Self | Area M. | Senior M. |
| | | | | Name of reviewer | | 90 or over | 85 or over | 80 or over |

| Review Item | Key Points to Review | Poor | Rather poor | Fair | Quite good | Good | Comments |
|---|--|--------------------|---|--|-------------------------------------|--|--|
| | | 1 pt. | 2 pt. | 3 pt. | 4 pt. | 5 pt. | |
| 1. Sustainment of Step 1 | -Cleaning levels achieved in Step 1 (Initial Cleaning) being properly sustained? | | | | | | |
| 2. Countermeasures for main body of equipment | -Sources of dirt, dust, oil leaks, air leaks, etc. all plotted on a chart, and action taken to rectify them? | | | | | | |
| | -Hard-to-access areas all marked on a chart, and creative improvements implemented to make them more accessible (guarding improved, original cleaning tools devised, everything sorted and reorganised)? | | | | | | |
| 3. Countermeasures for peripheral devices | -Sources of dirt, dust, oil leaks, air leaks, etc. all plotted on a chart, and action taken to rectify them? | | | | | | |
| | -Hard-to-access areas all marked on a chart, and creative improvements implemented to make them more accessible (guarding improved, original cleaning tools devised, everything sorted and reorganised)? | | | | | | |
| 4. Countermeasures for equipment surroundings | -Sources of dirt, dust, oil leaks, air leaks, etc. all plotted on a chart, and action taken to rectify them? | | | | | | |
| | -Hard-to-access areas all marked on a chart, and creative improvements implemented to make them more accessible (guarding improved, original cleaning tools devised, everything sorted and reorganised)? | | | | | | |
| 5. Improvement and sustainment | -Lubrication points clearly labelled according to lubrication standards, so that anyone can lubricate the machines correctly? | | | | | | |
| 6. Status of activities | -All team members actively involved? | | | | | | |
| | -Plenty of original thought going into the improvements? | | | | | | |
| Scoring key | Points | | 2 | 4 | 6 | 8 | 10 |
| | 1-5 | Equipment | Hardly implemented at all | Only implemented in obvious places | Implemented in specific locations | Also implemented in more difficult and less obvious places | Comprehensive lubrication achieved hardly any outstanding issues |
| 6 | People | No interest at all | Only maintenance staff and supervisors active | Operators taking part, but doing the easy tasks only | Operators doing nearly all the work | Responsibilities clearly defined, and everything being done properly | |

Table 5.9-(3)

| | | | | | | | | |
|--|------|--------------|----------------|------------------------------|--|-------------------------------|--------------|-------------|
| Autonomous Maintenance Review Request | | | | Area / Team | | Submission date | Area manager | Team leader |
| Autonomous Maintenance Review Sheet | | | | Equip. Unit No. | | Score: pt. Pass Fail | | |
| Step 3: Provisional Autonomous Maintenance Standards (Processing Equipment) | | | | Date requested for review | | Pass levels | | |
| Review type | Self | Area Manager | Senior Manager | Actual date / Time of review | | Self | Area M. | Senior M. |
| | | | | Name of reviewer | | 90 or over | 85 or over | 80 or over |

| Review Item | Key Points to Review | Poor | Rather poor | Fair | Quite good | Good | Comments |
|--|---|-------|-------------|-------|------------|-------|----------|
| 1. Sustainment of Steps 1 and 2 | -Cleaning levels achieved in Step 1 (Initial Cleaning) and improvements made in Step 2 (Contamination Sources and Hard-to-Access Areas) being properly sustained? | 3 pt. | 6 pt. | 9 pt. | 12 pt. | 15pt. | |
| | | | | | | | |
| 2. Maintenance of basic equipment conditions (action standards for cleaning, lubricating and tightening) | (Cleaning Standards) -Separate standards created for each equipment unit, area, etc.? | 1 pt. | 2 pt. | 3 pt. | 4 pt. | 5 pt. | |
| | -Cleaning areas, locations and work duties properly defined and allocated? | | | | | | |
| | -Cleaning methods and tools specified? | | | | | | |
| | -Suitable cleaning times and intervals set and observed? | | | | | | |
| | -Standards clear enough for anyone to follow? | | | | | | |
| | (Lubrication Standards) -Type and quantity of oil, frequency of lubrication, method and responsibilities all clearly specified? | | | | | | |
| | -All lubrication points correctly labelled? | | | | | | |
| | -Required lubricants always available? | | | | | | |
| | -Lubricants stored neatly and systematically (lubricant storage areas clean and tidy)? | | | | | | |
| | (Tightening) -Nuts and bolts all correctly tightened? | | | | | | |
| | -Any nuts and bolts missing? | | | | | | |
| 3. Awareness of role in creating standards | -Teams setting their own standards? | 2 pt. | 4 pt. | 6 pt. | 8 pt. | 10pt. | |
| | -Standards being observed? | | | | | | |
| | -Improvements actively pursued to make checking easier and enhance visual management? | | | | | | |

Table 5.9-(4)

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|---|------|--------------|----------------|------------------------------|--|--|--------------|-------------|
| Autonomous Maintenance Review Request | | | | Area / Team | | Submission date | Area manager | Team leader |
| Autonomous Maintenance Review Sheet | | | | Equip. Unit No. | | Score: pt. Pass Fail | | |
| Step 4-1: General Inspection (Fastenings) | | | | Date requested for review | | Pass levels :Score = total score for Review Items 1- 6 | | |
| Review type | Self | Area Manager | Senior Manager | Actual date / Time of review | | Self | Area M. | Senior M. |
| | | | | Name of reviewer | | 90 or over | 85 or over | 80 or over |

| Review Item | Key Points to Review | Poor | Rather poor | Fair | Quite good | Good | Comments |
|---|--|--------|-------------|--------|------------|---------|----------|
| | | 20 pt. | 40 pt. | 60 pt. | 80 pt. | 100 pt. | |
| Sustainment | (Steps 1 to 3 activities properly managed and sustained?) -Action against contamination sources being properly sustained? -Good improvements making hard-to-access areas more accessible? -Cleaning and lubrication standards completed and applied rigorously? | | | | | | |
| 1. Skills Training | -Leaders and team members actively creating OPLs and compiling them into manuals to upgrade their skills? -General Inspection skills mastered by all team members? | 1 pt. | 2 pt. | 3 pt. | 4 pt. | 5 pt. | |
| 2. General Inspection | -Inspection done correctly, covering all items in category trained? -Minor equipment problems identified reliably during inspection process? -Action taken to deal with these problems? | | | | | | |
| 3. Safety | -Progress made in identifying and fixing minor equipment problems that compromise safety? | | | | | | |
| 4. Shop-floor review (Fastenings) | -All nuts and bolts, etc. correctly tightened? -Any nuts or bolts missing or damaged? -Countermeasures against loosening (locknuts, etc.) introduced where necessary? -Flat washers used for oval holes? -Bolts of suitable length used? -Matchmarks inscribed on nuts and bolts susceptible to vibration? -Same kinds of nuts, bolts, washers, etc. used in same kinds of locations? -Spanners and other tools located and arranged for easy use (marked location for each tool)? -Regularly-used fastenings improved for easy installation and removal?? | | | | | | |
| 5. Provisional Autonomous Maintenance standards | -Provisional checking standards completed? -Improvements made to reduce number of checks required? -Improvements done to make checks easier to carry out? -Suitable checking methods and checking intervals adopted? -Ways found to ensure that all checks are done reliably, without any being omitted? | | | | | | |

Table 5.9-(5)

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|--|------|--------------|----------------|------------------------------|--|--|--------------|-------------|
| Autonomous Maintenance Review Request | | | | Area / Team | | Submission date | Area manager | Team leader |
| Autonomous Maintenance Review Sheet | | | | Equip. Unit No. | | Score: pt. Pass Fail | | |
| Step 4-2: General Inspection (Lubrication) | | | | Date requested for review | | Pass levels :Score = total score for Review Items 1- 6 | | |
| Review type | Self | Area Manager | Senior Manager | Actual date / Time of review | | Self | Area M. | Senior M. |
| | | | | Name of reviewer | | 90 or over | 85 or over | 80 or over |

| Review Item | Key Points to Review | Poor | Rather poor | Fair | Quite good | Good | Comments |
|---|--|--------|-------------|--------|------------|---------|----------|
| | | 20 pt. | 40 pt. | 60 pt. | 80 pt. | 100 pt. | |
| Sustainment | (Steps 1 to 3 activities properly managed and sustained?) -Action against contamination sources being properly sustained? -Good improvements making hard-to-access areas more accessible? -Cleaning and lubrication standards completed and applied rigorously? | | | | | | |
| 1. Skills Training | -Leaders and team members actively creating OPLs and compiling them into manuals to upgrade their skills? -General Inspection skills mastered by all team members? | 1 pt. | 2 pt. | 3 pt. | 4 pt. | 5 pt. | |
| 2. General Inspection | -Inspection done correctly, covering all items in category trained? | | | | | | |
| | -Minor equipment problems identified reliably during inspection process? | | | | | | |
| | -Action taken to deal with these problems? | | | | | | |
| 3. Safety | -Progress made in identifying and fixing minor equipment problems that compromise safety? | | | | | | |
| 4. Shop-floor review (Lubrication) | -Lubrication points correctly and clearly labelled, with effective systems for ensuring that none is missed out? | | | | | | |
| | -Correct lubricant types being used? | | | | | | |
| | -Correct amounts of lubricant being used? | | | | | | |
| | -Lubricants clean and not degraded? | | | | | | |
| | -All lubrication pipes unblocked and undamaged? | | | | | | |
| | -Lubricants always available when needed? | | | | | | |
| | -Different lubricators, oil cans, etc. used for different types of lubricant? | | | | | | |
| | -All grease nipples and lubricators undamaged and free of dust and dirt? | | | | | | |
| 5. Provisional Autonomous Maintenance standards | -Different lubricant types separated and arranged systematically in lubrication stations? Lids always kept on containers? Stations appropriately located and free from dust and dirt? | | | | | | |
| | -Provisional checking standards completed? | | | | | | |
| | -Improvements made to reduce number of checks required? | | | | | | |
| | -Improvements done to make checks easier to carry out? | | | | | | |
| | -Suitable checking methods and checking intervals adopted? | | | | | | |
| | -Ways found to ensure that all checks are done reliably, without any being omitted? | | | | | | |

Table 5.9-(6)

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|---------------------------------------|------|--------------|----------------|------------------------------|--|--|--------------|-------------|
| Autonomous Maintenance Review Request | | | | Area / Team | | Submission date | Area manager | Team leader |
| Autonomous Maintenance Review Sheet | | | | Equip. Unit No. | | Score: pt. Pass Fail | | |
| Step 4-3: General Inspection (Drives) | | | | Date requested for review | | Pass levels :Score = total score for Review Items 1- 6 | | |
| Review type | Self | Area Manager | Senior Manager | Actual date / Time of review | | Self | Area M. | Senior M. |
| | | | | Name of reviewer | | 90 or over | 85 or over | 80 or over |

| Review Item | Key Points to Review | Poor | Rather poor | Fair | Quite good | Good | Comments |
|---|--|--------|-------------|--------|------------|---------|----------|
| | | 20 pt. | 40 pt. | 60 pt. | 80 pt. | 100 pt. | |
| Sustainment | (Steps 1 to 3 activities properly managed and sustained?) -Action against contamination sources being properly sustained? -Good improvements making hard-to-access areas more accessible? -Cleaning and lubrication standards completed and applied rigorously? | | | | | | |
| | | 1 pt. | 2 pt. | 3 pt. | 4 pt. | 5 pt. | |
| 1. Skills Training | -Leaders and team members actively creating OPLs and compiling them into manuals to upgrade their skills? -General Inspection skills mastered by all team members? | | | | | | |
| 2. General Inspection | -Inspection done correctly, covering all items in category trained? -Minor equipment problems identified reliably during inspection process? -Action taken to deal with these problems? | | | | | | |
| 3. Safety | -Progress made in identifying and fixing minor equipment problems that compromise safety? | | | | | | |
| 4. Shop-floor review (Drives) | -V-belts unworn and in good condition? Pulleys unworn and properly centred? -V-belts correctly tensioned? -Visual controls introduced on V-belt covers to indicate direction of rotation, belt specifications, etc.? -Lubricating oil penetrating fully between pins and bushes on chains? -Chains unstretched and properly centred? Chains free of meshing problems due to worn sprockets? -Bearings free of overheating, vibration or strange noises due to bent or off-centre shafts, loose fixing bolts, under-lubrication, etc.? -Shafts, keys and couplings free of play (loose bolts, etc.)? -Irregular noise in gearboxes, speed reducers, etc.? -Gearboxes, speed reducers, etc. properly lubricated? Any overheating? | | | | | | |
| 5. Provisional Autonomous Maintenance standards | -Provisional checking standards completed? -Improvements made to reduce number of checks required? -Improvements done to make checks easier to carry out? -Suitable checking methods and checking intervals adopted? -Ways found to ensure that all checks are done reliably, without any being omitted? | | | | | | |

Table 5.9-(7)

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|---|------|--------------|----------------|------------------------------|--|---|--------------|-------------|
| Autonomous Maintenance Review Request | | | | Area / Team | | Submission date | Area manager | Team leader |
| Autonomous Maintenance Review Sheet | | | | Equip. Unit No. | | Score: pt. Pass Fail | | |
| Step 4-4: General Inspection (Hydraulics and Pneumatics) | | | | Date requested for review | | Pass levels :Score = total score for Review Items 1- 6 | | |
| Review type | Self | Area Manager | Senior Manager | Actual date / Time of review | | Self | Area M. | Senior M. |
| | | | | Name of reviewer | | 90 or over | 85 or over | 80 or over |

| Review Item | Key Points to Review | Poor | Rather poor | Fair | Quite good | Good | Comments |
|--|--|--------|-------------|--------|------------|---------|----------|
| | | 20 pt. | 40 pt. | 60 pt. | 80 pt. | 100 pt. | |
| Sustainment | (Steps 1 to 3 activities properly managed and sustained?) -Action against contamination sources being properly sustained? -Good improvements making hard-to-access areas more accessible? -Cleaning and lubrication standards completed and applied rigorously? | | | | | | |
| | | 1 pt. | 2 pt. | 3 pt. | 4 pt. | 5 pt. | |
| 1. Skills Training | -Leaders and team members actively creating OPLs and compiling them into manuals to upgrade their skills? -General Inspection skills mastered by all team members? | | | | | | |
| 2. General Inspection | -Inspection done correctly, covering all items in category trained? -Minor equipment problems identified reliably during inspection process? -Action taken to deal with these problems? | | | | | | |
| 3. Safety | -Progress made in identifying and fixing minor equipment problems that compromise safety? | | | | | | |
| 4. Shop-floor review and Pneumatics, plus water circulation systems) | -Pipes and units free of leaks and stains? | | | | | | |
| | -All units effectively protected against dust? | | | | | | |
| | -Motors and pumps free of irregular noise and vibration, and switchover valves, solenoid valves, etc. free of odd noises, strange smells, etc.? | | | | | | |
| | -Correct oil volume and oil temperature in hydraulic units? | | | | | | |
| | -FRLs being used correctly (correct oil volume, clean filter, etc.)? | | | | | | |
| | -Hoses correctly installed, clean, undamaged and free of vibration? | | | | | | |
| | -Pipes run above floor level, and properly supported? | | | | | | |
| | -Pipes easy to inspect and service? | | | | | | |
| 5. Provisional Autonomous Maintenance standards | -Pressure gauges all in order (correct readings, easily-read dials)? | | | | | | |
| | -Provisional checking standards completed? | | | | | | |
| | -Improvements made to reduce number of checks required? | | | | | | |
| | -Improvements done to make checks easier to carry out? | | | | | | |
| | -Suitable checking methods and checking intervals adopted? | | | | | | |
| | -Ways found to ensure that all checks are done reliably, without any being omitted? | | | | | | |

Table 5.9-(8)

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|---|------|--------------|----------------|------------------------------|--|--|--------------|-------------|
| Autonomous Maintenance Review Request | | | | Area / Team | | Submission date | Area manager | Team leader |
| Autonomous Maintenance Review Sheet | | | | Equip. Unit No. | | Score: pt. Pass Fail | | |
| Step 4-5: General Inspection(Electrics) | | | | Date requested for review | | Pass levels :Score = total score for Review Items 1- 6 | | |
| Review type | Self | Area Manager | Senior Manager | Actual date / Time of review | | Self | Area M. | Senior M. |
| | | | | Name of reviewer | | 90 or over | 85 or over | 80 or over |

| Review Item | Key Points to Review | Poor | Rather poor | Fair | Quite good | Good | Comments |
|---|---|--------|-------------|--------|------------|---------|----------|
| | | 20 pt. | 40 pt. | 60 pt. | 80 pt. | 100 pt. | |
| Sustainment | (Steps 1 to 3 activities properly managed and sustained?) -Action against contamination sources being properly sustained? -Good improvements making hard-to-access areas more accessible? -Cleaning and lubrication standards completed and applied rigorously? | | | | | | |
| | | 1 pt. | 2 pt. | 3 pt. | 4 pt. | 5 pt. | |
| 1. Skills Training | -Leaders and team members actively creating OPLs and compiling them into manuals to upgrade their skills? -General Inspection skills mastered by all team members? | | | | | | |
| 2. General Inspection | -Inspection done correctly, covering all items in category trained? -Minor equipment problems identified reliably during inspection process? -Action taken to deal with these problems? | | | | | | |
| 3. Safety | -Progress made in identifying and fixing minor equipment problems that compromise safety? | | | | | | |
| 4. Shop-floor review (Electrics) | -Distribution panels, control panels and operating panels all clearly marked? -Temperature in distribution panels, control panels and operating panels low enough? -Distribution panels, control panels and operating panels all clean (free of water, oil, dirt, etc.?) -Door seals, filters, etc. on distribution panels, control panels and operating panels all clean and undamaged? -No irregularities in wiring or contacts (overheating, damage, unsafe layout)? -Motors free of overheating, strange noises, vibration? -Sensors securely installed in correct positions, and making proper contact? -Sensors all clean (free of water, oil, dirt, etc.)? -Sensors undamaged, with all lead wires correctly installed? Effectively protected against possible damage? | | | | | | |
| 5. Provisional Autonomous Maintenance standards | -Provisional checking standards completed? -Improvements made to reduce number of checks required? -Improvements done to make checks easier to carry out? -Suitable checking methods and checking intervals adopted? -Ways found to ensure that all checks are done reliably, without any being omitted? | | | | | | |

Table 5.9-(9)

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|--|------|--------------|----------------|------------------------------|--|--|--------------|-------------|
| Autonomous Maintenance Review Request | | | | Area / Team | | Submission date | Area manager | Team leader |
| Autonomous Maintenance Review Sheet | | | | Equip. Unit No. | | Score: pt. Pass Fail | | |
| Step 1: Initial Cleaning (Assembly Shop) | | | | Date requested for review | | Pass levels :Score = total score for 'equipment' (Review Items 1-5) + score for 'people' (Review Item 6) | | |
| Review type | Self | Area Manager | Senior Manager | Actual date / Time of review | | Self | Area M. | Senior M. |
| | | | | Name of reviewer | | 90 or over | 85 or over | 80 or over |

| Review Item | Key Points to Review | Poor | Rather poor | Fair | Quite good | Good | Comments |
|---|---|--------------------|---|--|--|--|---|
| | | 1 pt. | 2 pt. | 3 pt. | 4 pt. | 5 pt. | |
| 1. Cleanliness of surrounding area | -Floors free of dirt, oil stains, sawdust, waste material, nuts, bolts, etc.? -All unnecessary objects cleared away? | | | | | | |
| | -Cleaning tools, work tools, etc. all stored neatly in designated positions? -Floor marking standards observed? | | | | | | |
| 2. Cleanliness of peripheral equipment, assembly tools, etc. | -Free of dirt, dust and oil stains? -All parts suitably tightened and free of wear? -Electric cables undamaged? | | | | | | |
| | -Equipment and tools kept in good condition and stored in a well-organised manner? | | | | | | |
| 3. Cleanliness of trolleys, carts, shelving, work benches and other items on which parts are placed | -Trolleys, carts, shelves, work benches, etc. positioned correctly? -Unnecessary objects cleared away? | | | | | | |
| | -Trolleys, carts, shelves, work benches, etc. stable and in good condition, posing no safety -risks? | | | | | | |
| 4. Cleanliness of storage points for assembly components | -Components stored neatly, in parallel and at right-angles (on shelving, pallets, trolleys, etc.)? | | | | | | |
| | -Components clearly labelled to show at a glance what each is used for? | | | | | | |
| 5. Contamination sources and hard-to-access areas | -Systematic feedback of suggestions to improve precision in upstream processes? -Chart drawn up plotting all sources of dirt and dust, and areas that are hard to clean? Plan formulated for dealing with these? | | | | | | |
| | -Improved cleaning tools introduced? -Cleaning areas clearly defined and allocated? | | | | | | |
| 6. Way in which TPM is being addressed | -Do all team members have a good understanding of what TPM means, and are they all fully involved in implementing it? | Points | 10 | 20 | 30 | 40 | 50 |
| | | Score | | | | | |
| Scoring key | Points | | 1 point / 10 points | 2 points / 20 points | 3 points / 30 points | 4 points / 40 points | 5 points / 50 points |
| | 1-5 | Equipment | Hardly implemented at all | Only implemented in obvious places | Implemented in specific locations (e.g. sliding parts, chutes) | Also implemented in more difficult and less obvious places | Full 'checking through cleaning' achieved, and difficult areas starting to be addressed |
| 6 | People | No interest at all | Only maintenance staff and supervisors active | Operators taking part, but doing the easy tasks only | Operators doing nearly all the work | Responsibilities clearly defined, and everything being done properly | |

Table 5.9-(10)

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|--|------|--------------|----------------|------------------------------|--|--|--------------|-------------|
| Autonomous Maintenance Review Request | | | | Area / Team | | Submission date | Area manager | Team leader |
| Autonomous Maintenance Review Sheet | | | | Equip. Unit No. | | Score: pt. Pass Fail | | |
| Step 2: Contamination Sources and Hard-to-Access Areas (Assembly Shop) | | | | Date requested for review | | Pass levels :Score = total score for Review Items 1- 6 | | |
| Review type | Self | Area Manager | Senior Manager | Actual date / Time of review | | Self | Area M. | Senior M. |
| | | | | Name of reviewer | | 90 or over | 85 or over | 80 or over |

| Review Item | Key Points to Review | Poor | Rather poor | Fair | Quite good | Good | Comments |
|--|--|--------------------|---|--|-------------------------------------|--|---|
| | | 1 pt. | 2 pt. | 3 pt. | 4 pt. | 5 pt. | |
| 1. Sustainment of Step 1 | -Cleaning levels achieved in Step 1 (Initial Cleaning) being properly sustained? | | | | | | |
| 2. Measures for achieving appropriate levels of permanent stock | -Measures taken to ensure suitable stock levels are maintained? | | | | | | |
| | -Improvements and modifications introduced to make remaining stock levels visible at a glance? | | | | | | |
| 3. Countermeasures for peripheral equipment and assembly tools | -Sources of dirt, dust, oil leaks, air leaks, etc. all plotted on a chart, and action taken to rectify them? | | | | | | |
| | -Improvements and modifications introduced to make remaining stock levels visible at a glance? | | | | | | |
| 4. Countermeasures for component shelves and assembly storage points | -Chart drawn up plotting all sources of disruption to storage system, and appropriate action taken? | | | | | | |
| | -Improvements and modifications introduced to make remaining stock levels visible at a glance? | | | | | | |
| 5. Improvement and sustainment, and future plans | -Systematic feedback of suggestions to improve precision in upstream processes? Strategies worked out for sustaining conditions in the future? | | | | | | |
| 6. Status of activities | -All team members actively involved? | | | | | | |
| | -Plenty of original thought going into the improvements? | | | | | | |
| Scoring key | Points | | 2 points | 4 points | 6 points | 8 points | 10 points |
| | 1-5 | Equipment | Hardly implemented at all | Only implemented in obvious places | Implemented in specific locations | Also implemented in more difficult and less obvious places | Comprehensive lubrication achieved; hardly any outstanding issues |
| 6 | People | No interest at all | Only maintenance staff and supervisors active | Operators taking part, but doing the easy tasks only | Operators doing nearly all the work | Responsibilities clearly defined, and everything being done properly | |

Table 5.9-(11)

| | | | | | | | | |
|---|------|--------------|----------------|------------------------------|--|--------------------|-----------------------|-------------------------|
| Autonomous Maintenance Review Request | | | | Area / Team | | Submission date | Area manager | Team leader |
| Autonomous Maintenance Review Sheet | | | | Equip. Unit No. | | Score: pt. | Pass | Fail |
| Step 3: Sustainment Standards (Assembly Shop) | | | | Date requested for review | | Pass levels | | |
| Review type | Self | Area Manager | Senior Manager | Actual date / Time of review | | Self 90 or over | Area M. 85 or over | Senior M. 80 or over |
| | | | | Name of reviewer | | | | |

| Review Item | Key Points to Review | Poor | Rather poor | Fair | Quite good | Good | Comments |
|--|---|-------|-------------|-------|------------|--------|----------|
| 1. Sustainment of Steps 1 and 2 | -Cleaning levels achieved in Step 1 (Initial Cleaning) and improvements made in Step 2 (Contamination Sources and Hard-to-Access Areas) being properly sustained? | 3 pt. | 6 pt. | 9 pt. | 12 pt. | 15 pt. | |
| | | | | | | | |
| 2. Efficient system based on work standards, checking standards and workplace management standards | -Precise standards created for managing assembly equipment, tools, and consumables? | 2 pt. | 4 pt. | 6 pt. | 8 pt. | 10 pt. | |
| | -Cleaning and inspection standards created for equipment, tools, assembly areas and storage areas? Standards being observed? | | | | | | |
| | -Inspection efficiency maximised; system allows problems or defects to be rectified quickly? | | | | | | |
| | -Standards for component storage and placement clearly defined, and visual controls used? | | | | | | |
| | -Work standards established and observed? | | | | | | |
| | -Layout revised and improved to raise efficiency of assembly work? | | | | | | |
| | -Assembly work schedule drawn up by team itself, displayed clearly, and properly maintained? | | | | | | |
| 3. Status of activities | -Activity boards used effectively? | 1 pt. | 2 pt. | 3 pt. | 4 pt. | 5 pt. | |
| | -Many improvement suggestions being made, and efficiency drive being actively implemented? | | | | | | |
| 4. Improvement and sustainment, and future plans | -Improvements being actively pursued? Team discussing how to proceed to next step? | | | | | | |
| | -Improvements actively pursued to make checking easier and enhance visual management? | | | | | | |

Table 5.10

| | | | | | |
|---|---|---------------------------|--|----------------|--------------------------|
| Application for Autonomous Maintenance Review Step No. (Review No.) | | Date : | | | |
| | | TPM Office | Area Manager | Supervisor | Originator |
| | | | | | |
| Team making application | Area / Line/ Team | Team Name | Leader's Name | No. of members | Equipment to be Reviewed |
| | | | | | |
| Overall Status of Activities | Date last step passed | | Status of Activities Relating to Current Step | Work Time | Total time _____ hr. |
| | Preferred date for review of current step | | | Meeting time | Total no. of people |
| | Number of improvement suggestions | | | | Total no. of meetings |
| | | | | | Total duration _____ hr. |
| | | Total no. of participants | | | |
| Requested focus of review | Scope | | | | |
| | Key points | | | | |
| | Difficulties overcome | | | | |
| | Other | | | | |
| Date/time of review | | Reviewer | | Conclusion | Date |
| Duration of review | | | | | |
| Chief Reviewer's Comments | | | TPM Office's Comments | | |
| | | | | | |

Table 5.11

| | | | | | | | | |
|--|--|------------|--------------|------------|------------|--|--|--|
| <h2 style="margin: 0;">Autonomous Maintenance Activities Report</h2> | | | | | Date : | | | |
| | | TPM Office | Area Manager | Supervisor | Originator | | | |
| | | | | | | | | |

| Step No. | Area / Line / Team | Team Name | Leader's Name | No. of members | Topic | | |
|----------|--------------------|-----------|---------------|----------------|-------|--|--|
| | | | | | | | |

| | Date | Category | Details | Participants (note time spent by each person) | Time spent | No. of people | Total Time |
|--|--|----------|---------|---|------------|---------------|------------|
| | -Meetings held -Action taken -Training received -Results achieved Meetings = M Action = A Teaching = T Practice = P | | | | | | |
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| No. of problems identified | No. taken on by team | No. taken on by other departments | Completed in current month | Carried over to next month | Results | | No. | No. of People | Total time |
|----------------------------|----------------------|-----------------------------------|----------------------------|----------------------------|---------|----------|-----|---------------|------------|
| | | | | | | Meetings | | | |
| Action | | | | | | | | | |
| Teaching | | | | | | | | | |
| Practice | | | | | | | | | |

| | |
|---------------------------------------|--|
| Schedule of Activities for Next Month | |
|---------------------------------------|--|

| Focused Improvement Progress Check | Identify Situation | Select topics | Set targets | Plan activities | Analyse situation | Stratify, analyse, and track down causes | Take corrective action | Confirm and consolidate | Assess results and benefits | Review |
|------------------------------------|--------------------|---------------|-------------|-----------------|-------------------|--|------------------------|-------------------------|-----------------------------|--------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

Manager's views and advice (comments from review, etc.)

Table 5.12

| TPM Minutes of Meeting / Action | | <input type="checkbox"/> Area Committee <input type="checkbox"/> Area Subcommittee <input type="checkbox"/> Team | TPM Office | Area Manager | Supervisor | Team Leader |
|------------------------------------|--------------------|--|--|-----------------------|------------|-------------|
| Date (of Issue) | Area / Line / Team | Team Name | Leader's Name | Recorder | | |
| Topic or agenda | | Details of Activities | Meeting Date & Time: | | | |
| Participants | | | Action Date & Time | | | |
| Absentees | | | Teaching Date & Time | | | |
| | | | Training Date & Time | | | |
| | | | Practice Date & Time | | | |
| | | | Total time (hr.) × (people) = person-hrs. | | | |
| No | Item | Description / Action | Deadline | Person Responsible | | |
| | | | | | | |
| Next topic or agenda | | Next scheduled meeting | Date | Time | Place | |
| Supervisor's comments | | Area Manager's comments | | TPM Office's comments | | |

Table 5.13 Example of a Team Activity Report

| Example of a Team Activity Report | | | | | |
|--|---|---|----------------------|--|--------------------|
| Team Activity Report | | Issued | | October 18, 200_ (5 th meeting) | |
| | | Team | | Twisters | |
| Topic Getting ready to undergo the Step 2 review | | Area | | Tool Area 3, Shift 1, Group 5 | |
| | | Team Leader | Johnston | Recorder Jones | |
| Participants: Johnston, Jones, Shaw, Elliott, Hall, Augustine Absentees: None | | Activities | Work done | __:__ to __:__ (time) on ____/____ (date) | |
| | | | Meeting | 15:50 to 17:00 on October 15 | |
| | | | Teaching carried out | __:__ to __:__ (time) on ____/____ (date) | |
| | | | Total time | (1 ^{hour}) × (6 ^{persons}) = (6 ^{persons} -) hours | |
| No. | Item | Action | | Duration | Person responsible |
| 1 | Our Step 2 review will take place on October 22. What do we do between now and then? | (1) Review initial cleaning (day and night shifts) and carry out 15 minutes' vigorous cleaning after each break | | From October 8 | Everyone |
| | | (2) Draw up a list of priorities for initial cleaning | | October 8 | Jones |
| | | (3) Record oil leak de-tagging status on activity boards | | October 20 | Shaw |
| 2 | An anti-scatter cover is now installed, but there is still some spillage from the gaps. | (1) Try out Version 8 spot-cover | | October 20 | Elliott, Hall |
| 3 | Re-check the situation | (1) Record using VTR borrowed from Area Manager | | October 20 | Augustine |
| Area Manager's comments: Step 3 should be read and understood | | Area Office's comments: Hold meetings more often | | Supervisor's comments: Keep following the PDCA cycle as you do this | |