BY ORDER OF THE COMMANDER
AEROSPACE MAINTENANCE AND
REGENERATION CENTER

AMARC INSTRUCTION 21-123

29 FEBRUARY 2000

Maintenance

SEALING AND RESEALING STORED AIRCRAFT

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This instruction implements applicable provisions of Air Force Policy Directive (AFPD) 21-1, Managing Aerospace Equipment Maintenance, the Interservice Support Agreement (ISA) and Technical Order (TO) 1-1-686, Desert Storage Preservation and Process Manual for Aircraft, Engines and Aircraft Auxiliary Power Units. It assigns the responsibilities and procedures for developing and controlling aircraft sealing diagrams; identification and relocation of removed components too large for storage in the aircraft and scheduling the sealing and resealing of stored aircraft. This instruction applies to the Aircraft Management (LA), Logistics (LG), Comptroller (FM), and Plans and Programs Directorates (XP).

SUMMARY OF CHANGES. Deleted the requirement for PCC and PIC input for labor. Deleted references to miscellaneous special projects. Updated offices and responsibilities. Major changes are indicated with an * (asterisk).

1. DEFINITIONS.

1.1. Discrepancy Maintenance. Discovery that additional aircraft work is needed that is not included on the work order, e.g., aircraft reseals.

1.2. Maintain In. An aircraft preservation process performed in accordance with (IAW) TO 1-1-686.

1.3. MAXIMO. An automated production planning, scheduling and tracking system.

1.4. MDS. Mission design series, what type of aircraft and its configuration.

1.5. MICREW. Maintain in crew.

1.6. PCN. Production control number, e.g., AMARC aircraft type identification number.

1.7. PWO. Production work order.

1.8. Seal Violations. Any aircraft seal discrepancy whether man-made or naturally caused.

1.9. SPM. System program manager of a weapons system.

1.10. WCD. Work control document. May be a MAXIMO PWO, a WDS job plan and an AFMC Form 959, Work Control Document. See AMARCI 21-126, Automated Work Control Document Procedures.

2. GENERAL.

2.1. All organizations will assist in developing functional sealing diagrams for aircraft new to AMARC. This ensures a sound program for the preservation of aerospace vehicles and equipment and to maintain the integrity of existing diagrams.

2.2. All aircraft will be sealed and resealed IAW TO 1-1-686 and the sealing diagram with the following exceptions:

2.2.1. Reclamation aircraft will be resealed only as required to prevent damage to potential reclamation items such as canopies, windows, doors and panels.

2.2.2. Aircraft that are not funded nor required by the owning service or SPM.

2.3. The MAXIMO system will be used to generate; initiate and schedule work orders for resealing stored aircraft.

3. SEALING DIAGRAMS RESPONSIBILITIES AND PROCEDURES.

3.1. Workload Division (FMW) will inform the Process In Division, Process In Support Branch (LAIO) of projected aircraft arrivals to ensure a sealing diagram will be available.

3.2. LAIO will:

3.2.1. Develop sealing diagrams using the following:

3.2.1.1. TO 1-1-686 and applicable TOs including the corrosion prone charts in each aircraft TO.

3.2.1.2. Available data from earlier water tests.

3.2.1.3. Information from SPMs, item managers and cognizant engineering activities for applicable MDS aircraft that may affect preservation integrity.

3.2.2. Distribute proposed sealing diagrams and changes to the following:

3.2.2.1. Storage Services Branch (LAIS) for review and coordination before publication.

3.2.2.2. Naval Inventory Control Point (NICP), Detachment Field Service Office (FSO) for coordination and approval before implementation on Navy aircraft IAW the ISA. Include appropriate review comments.

3.2.2.3. US Army Aviation and Missile Command, Chief Packaging Branch (USAAMCOM, AMSAM-MMC-LS-DP) for coordination and approval before implementation on Army aircraft IAW the ISA. Include appropriate review comments.

3.2.3. Clarify or interpret sealing diagrams as needed and have final responsibility for instruction content and meaning.

3.2.4. Coordinate with Production Control Division, Shop Floor Control Branch (LAAC), Scheduler for a place and time to test the proposed diagrams on a prototype aircraft.

3.2.5. Monitor the application of sealing materials.

3.2.6. Conduct the water spray test and analysis IAW TO 1-1-686 and note any problems or deficiencies.

3.2.7. Clarify questions on interpretation of the diagram.

3.2.8. Note incorrect application of sealing materials on the aircraft and direct LAIS to correct.

3.2.9. Revise the diagrams to include the corrections and changes.

3.2.10. Publish approved diagrams, revisions, supplements or changes and distribute:

3.2.10.1. LAIO keep one copy.

3.2.10.2. LAIS - Five copies.

3.2.10.3. FSO - Two copies for Navy aircraft only.

3.2.10.4. USAAMCOM, AMSAM - One copy for Army aircraft only.

3.2.11. Code sealing diagram revisions to highlight needed sealing changes on all affected aircraft as follows:

3.2.11.1. Immediate need - as soon as scheduling will permit, but not more than 30 days from issue of revised diagrams, if man-hours and funding is available.

3.2.11.2. Not later than the next 180-day maintain-in cycle.

3.2.11.3. Not later than the next represervation cycle.

NOTE:

Items coded and may be accomplished earlier, if the workload and funding permit.

3.2.12. Obtain approval from FSO before changes are accomplished for all Navy aircraft earlier than prescribed. If manpower and funds are not available, LAI may request an update. Any delays must be justified in writing and signed by the Director, LA.

3.2.13. Semiannually, develop and publish an index of sealing diagrams, changes, modifications, additions or deletions. Send one copy of the index to each organization listed in paragraph 3.2.10.

3.3. The following personnel will attend the test of the proposed sealing diagram:

3.3.1. The chief of LAIS and selected sealing crew leaders.

3.3.2. LAIO or designated representative.

3.3.3. Other interested parties such as FSO when Navy aircraft are tested.

3.4. The LAIS chief and work leaders will:

3.4.1. Review new diagrams or proposed changes to ensure sealing crew personnel understand the instructions.

3.4.2. Comment or recommend changes based on knowledge and experience, with consideration for workload and funding.

3.4.3. Send concurrence, comments or recommendations, including priorities to LAIO within 10 days.

3.4.4. Coordinate with LAIO for a new suspense date if additional time is required.

3.4.5. Ensure diagrams marked by LAIO as “Urgent,” “Priority,” etc., are processed within 5 workdays.

3.4.6. Maintain approved sealing diagrams and all changes.

3.4.7. Ensure that sealing crews have copies of current diagrams and comply with instructions.

3.4.8. Attend the water spray tests.

3.5. LAAC, Scheduler will:

3.5.1. Schedule aircraft for water spray tests at the wash rack when required.

3.5.2. Not schedule other aircraft into work with the same MDS within 2 weeks of the prototype arrival. This time is necessary for developing, coordinating and publishing the final sealing diagrams.

4. RESEALING RESPONSIBILITIES AND PROCEDURES.

4.1. If a PWO (or WCD) has been issued for resealing as part of an original project, the PWO will be forwarded to the LAAC, Scheduler.

4.2. Any aircraft seal violation found while working from a PWO or other WCD will be written on the face of that PWO or WCD. The identifying work center crew chief or supervisor will use the seal violation data written on the PWO to request a new PWO for the reseal work using the Work Request feature in the Work Orders module, attachment 1.

4.3. FMW is the sole approving authority for breaking the seal and resealing for any purpose except priority removal action. The FMW work loader (FM1, FM2, or FM3) will daily review the open PWOs, attachment 2.

4.3.1. Hold a PWO for funding determination based upon the reason for the resealing requirement. Approved funding can be reseal hours included in a project. The priority removal or routine reclamation customer should provide those funds. Charge resealing for man-made aircraft entries to the customer requiring entry into the aircraft.

4.3.2. Change the status (attachment 2) of the PWO when funding is secured to allow work to proceed.

4.3.3. Cancel the PWO using the MAXIMO procedures if a decision is made not to reseal an aircraft required such as reclamation aircraft, or aircraft going to Defense Reutilization and Marketing Office (DRMO).

4.4. Priority removal personnel will:

4.4.1. Only remove adjacent components and hardware where necessary to permit removal of the requested part.

4.4.2. Cap all affected lines and electrical connectors to reduce degradation after removal. Use only plastic caps or cloth bags to secure electrical connectors/devices; plastic bags may allow moisture leaks, which will create corrosive damage.

4.4.3. Store remaining components and parts in the aircraft as near as possible to the area from which parts were removed. If storage in the aircraft is not practical:

4.4.3.1. Seal and preserve the items IAW applicable directives.

4.4.3.2. Complete AMARC Form 22, Components/Items Missing and/or Removed from Aircraft; tag and turn parts in to Logistics Support Division, Special Assets Branch (LGLM) for storage. NOTE: Parts and components will not be stored in the engine tailpipes or intake ducts.

4.4.4. Close canopies, windows, panels, covers, doors, etc. Temporarily seal any opened areas with tape and barrier material.

4.4.5. Secure control surfaces, leading edges, flaps, etc., to preclude wind damage.

4.4.6. Retract or close bomb doors, close dive/speed brakes and return other power-actuated components to original configuration of aircraft if changed by removals or inspections.

4.4.7. Exercise good housekeeping. Rags, water cups, padding, cardboard, etc., will not be left in the aircraft.

4.4.8. Reinstall instruments, components, or equipment returned to aircraft whenever practical. Otherwise, items will be capped, plugged, or protected and placed securely in the aircraft.

4.4.9. Place removed hardware, nuts, bolts, washers, spacers, etc., in bags and store near the removed items. NOTE: Hardware will not be stored in the engine tailpipes nor intake ducts.

4.4.10. Preserve axles and bearing races remaining from wheel removal IAW TO 1-1-686.

4.4.11. Store wheel assemblies in the aircraft when only the struts are requested. The bearings will be wrapped with MIL-B-131 barrier material. If the wheels are too large to store in the aircraft, tag and place them on pallets and turn in to LGLM for storage. Cover axle openings with barrier material and tape.

4.4.12. When removing a propeller to fill an engine requirement:

4.4.12.1. Store the assembled propellers in the aircraft if possible. Otherwise, protect and tag the propeller and turn in to LGLM with an AMARC Form 22.

4.4.12.2. If disassembly of a propeller is necessary and help is needed, submit an AMARC Form 71, Work Order Request, and send to LAAC, Scheduling to obtain assistance from Propulsion Branch (LASE). Store the disassembled propeller in the aircraft. Preserve exposed machine surfaces IAW TO 1-1-686.

4.4.13. Perform a condition inspection during the removal to identify removed residue items that are too large to store in the aircraft such as engines, cowlings, propellers, etc., prior to turn in to LGLM for storage. Complete the AMARC Form 71 and the AMARC Form 22, and send to LAAC, upon completion of the project.

NOTE. When a part is removed from an aircraft, is reinstalled or the aircraft is inspected, a temporary seal will be applied using authorized tape on the opened surface and any weather exposed area IAW TO 1-1-686. If an opening is too large to bridge with tape, an AMARC Form 45, Priority Removal Recap Sheet, will be submitted to the LAAC, Scheduler for input.

4.4.14. The LAAC schedulers will process a MAXIMO PWO for resealing of the aircraft using the Work Request feature in the Work Orders module, attachment 1, from the information on the AMARC Form 45.

4.5. Escort duty personnel for visitors authorized to remove parts will:

4.5.1. Be briefed by FMW.

4.5.2. Ensure escorted personnel do not break the seal on any aircraft without prior approval from FMW reflected in a PWO with an assigned AMARC PCN. Seals will only be broken in the area necessary to access the aircraft components being removed.

4.5.3. Input the MAXIMO Work Request from the PWO.

4.5.4. Debrief FMW.

4.5.5. Input and complete the MAXIMO Work Request Long Description, attachment 1, for resealing no later than close of the workday. Annotate the aircraft surface needing sealing or resealing, the MDS, aircraft serial number, document number which required opening the aircraft, the area the aircraft is located and the crew chief responsible for opening the aircraft. List any items removed such as windows, canopies, panels, doors, or any fixtures.

4.6. LAIS personnel (MICREW) will:

4.6.1. Reseal as scheduled on the PWO and note the corrective action.

NOTE:

Ensure special warning markings are stenciled or restenciled when unreadable or covered by spraylat or other material, that indicate the presence of hazardous material such as radioactive or explosive components left on or in the aircraft

4.6.2. Ensure there is no evidence of moisture and the cockpits and interior are dry when installing a permanent seal. If bad weather occurred during the time the aircraft was temporarily sealed, inspect the area inside the aircraft, particularly the cockpit, to ensure no moisture has accumulated. If moisture is found, open the area and allow drying before permanent resealing. Aircraft should not be sealed if the humidity is above 50 percent IAW TO 1-1-686.

4.6.3. Restencil aircraft markings that are covered by resealing, on top of the spraylat and tape.

4.6.4. Give the completed PWO to the LAIS crew chief to:

4.6.4.1. Enter the labor hours into MAXIMO using the Work Order Quick Reporting feature. See attachment 3 and the MAXIMO User's Manual for instructions.

4.6.4.2. Change the status of the PWO to "Closed" (Options ÆChange Status ÆClose ÆOK).

4.6.4.3. Forward each closed PWO to LAIO Scheduler.

4.7. The LAAC, Scheduler will:

4.7.1. Identify aircraft requiring reseal work using the Work Order Tracking feature in the Work Order module in attachment 2.

4.7.2. Determine the aircraft to be scheduled and assign a local priority for resealing aircraft based upon the "Target Completion Date" field, attachment 3.

NOTE:

Maintain in reseals are given a lower priority than reclamation and flight line reseals. These reseals will be scheduled as time allows, but all reseals must be completed within 10 days from the Work Request. Refer to paragraph 4.7.6.

4.7.3. Combine the PWOs with any other project paperwork and forward the work packages to LAIS.

4.7.4. If a personnel entry door has been removed, notify the chief of LAIS that a zipper door seal is required.

4.7.5. If the MICREW is performing a cycle inspection on an aircraft requiring reseal, a separate PWO must be initiated for resealing. The time for resealing is charged separately by the reseal crew, according to the data on resealing PWO. The MICREW work is a maintain-in storage charge.

4.7.6. Ensure permanent sealing is done IAW TO 1-1-686 within 10 workdays (see paragraph 4.7.2) after the aircraft is opened and temporarily sealed.

4.7.7. Forward closed PWOs to Policy and Technical Services Branch (LAAO), Aircraft Records.

4.8. Zippered door seal is:

4.8.1. A cover with a plastic three track zipper that is welded into the cover. The seal is taped and spraylated to the door opening.

4.8.2. Installed when the aircraft is expected to be subject to repeated entry for inspections or removal requests.

4.8.3. Installed when the entry door has been removed from the aircraft.

4.8.4. Installation procedures:

4.8.4.1. LAIO will provide instruction and drawings for construction and installation.

4.8.4.2. LAIS will order zipper seals through Supply Division, Forward Supply Management Branch (LGSC) using local manufacture procedures.

4.8.4.3. Egress and Armament Branch (LASG) will construct the door seals according to the drawings and instructions provided by LAIO.

OFFICIAL

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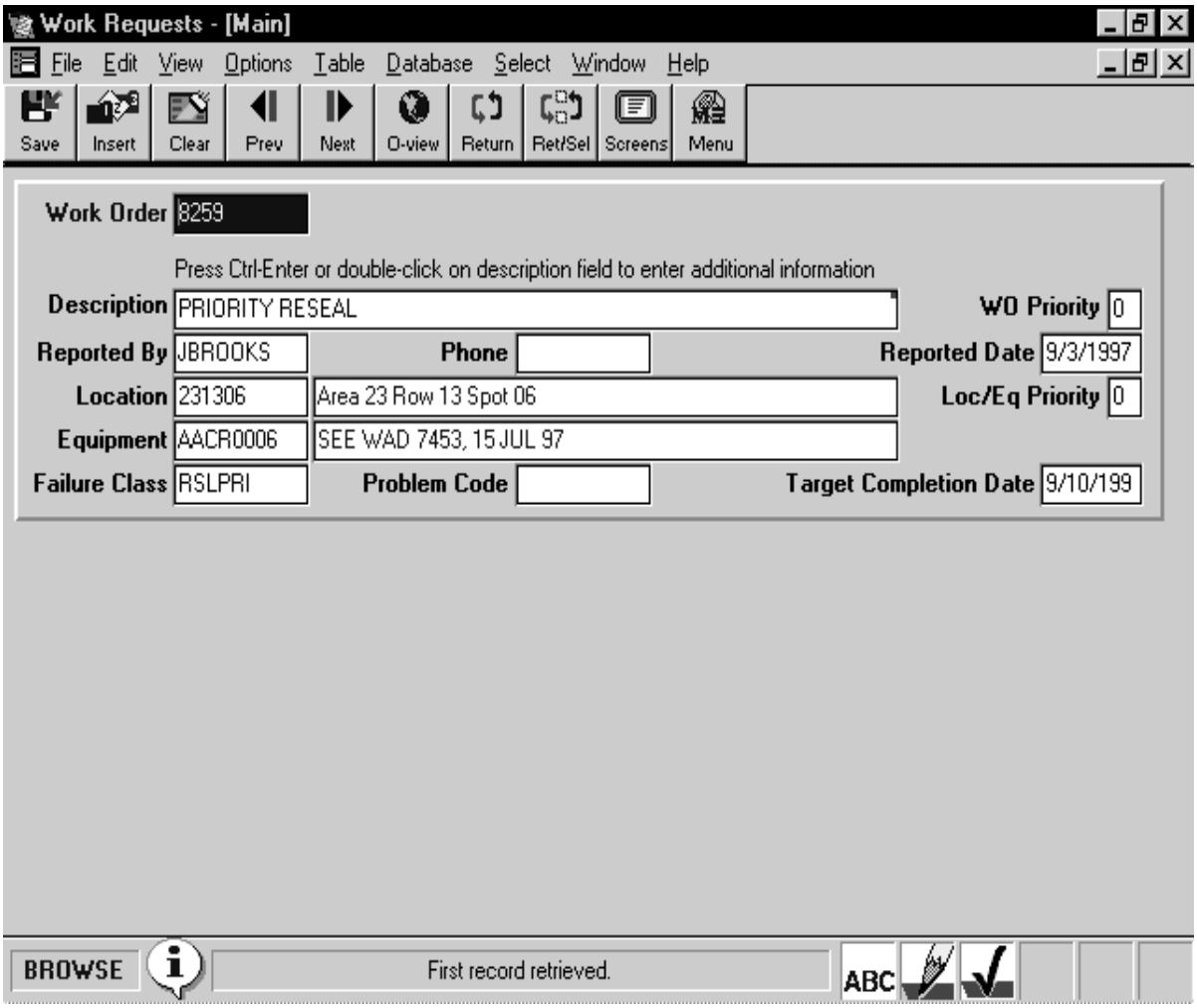
Attachment 1
RESEAL PWO

Figure A1.1. Requesting a Reseal Work Order.



A1.1. Click on the Insert tool bar button to create a new record and enter the work request details. The work order number will automatically be assigned.

A1.1.1. Enter the reason for the reseal in the "Description" field, i.e., maintain in, priority reclamation, etc.

A1.1.2. Double-click on the "Description" field to bring up "Long Description," figure 2. NOTE. In the "Long Description," annotate the MDS, aircraft serial number, the surface needing sealing, the removal document number that required opening the aircraft or the WAD number for the project, and the removal crew chief. List any removed items such as windows, canopies, panes, doors or fixtures. Click on OK button to return to the Work Request Screen.

A1.1.3. Enter the AMARC PCN in the "Equipment" field.

A1.1.4. Enter the due date for reseal in the "Target Completion Date" field, see paragraph 4.6.6.

A1.1.5. Enter the reseal code in the "Failure Class" field from table 1.

A1.2. Click on the Save tool bar button or press the F5 key to save the record and create a PWO with a status of WAPPR, see table 2.

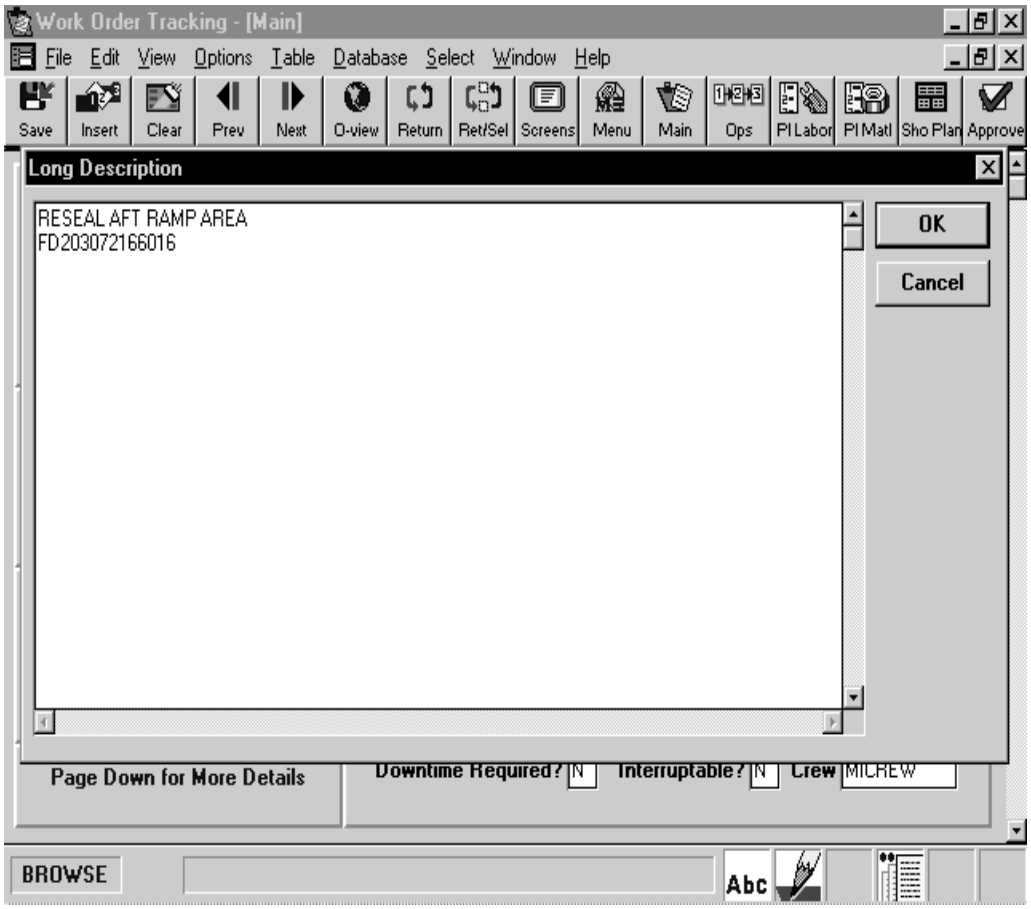
Table A1.1. Reseal and Job Plan Codes.

RSLMI	Reseal found during maintain in.
RSLREC	Reseal required as a result of routine reclamation.
RSLPRI	Reseal required as a result of priority reclamation.
RSLMSP	Reseal required as a result of a special project.
RSLFLT	Reseal required as a result of parts obtained for flyaway aircraft project.

Table A1.2. MAXIMO Status Codes.

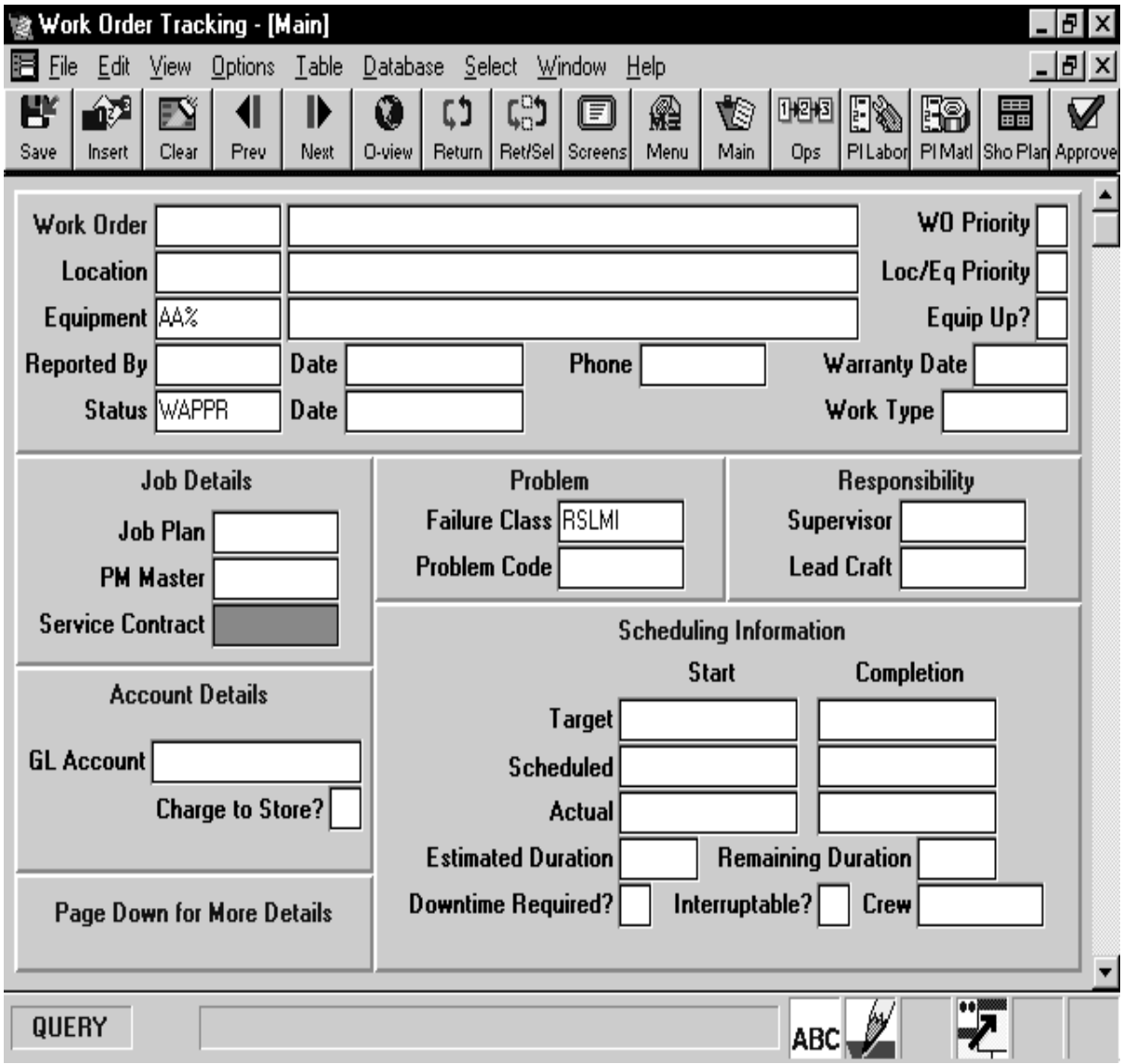
WAPPR	Work order held for funding approval.
WMATL	A work order waiting to be scheduled, funding approved.
WSCH	Waiting for funding, waiting to be scheduled.
INPRG	Work in progress.
COMP	Work order completed.
CLOSE	Work order closed.
CAN	Work order cancelled.

Figure A1.2. Work Request Long description.



Attachment 2
WAITING FOR OR APPROVED RESEAL FUNDING

Figure A2.1. Identifying Aircraft Requiring Reseals.



A2.1. Use the Work Order Tracking feature in the Work Orders module for this screen:

A2.1.1. Enter the aircraft identifier from table 3 in the "Equipment" field to call up all aircraft requiring reseal that are specific to a service.

Table A2.1. Equipment Field Aircraft Owner Identifier Codes.

AN%	Navy Aircraft
AH%	Army Aircraft
AA%	Air Force Aircraft
AC%	Coast Guard Aircraft
AX%	Non-DoD Aircraft
AY%	FMS Aircraft

A2.1.2. Enter WAPPR, table 2, in the "Status" field.

A2.1.3. Enter a reseal code from table 1 in the "Failure Class" field to indicate a specific reseal type is to be selected, or enter RSL% in the "Failure Class" field to indicate all reseal codes are to be selected..

A2.1.4. Press Enter.

A2.1.4.1. Figure 4. Approving a Reseal PWO.

FM3RS

Para.A2.2.3

Para.A2.2.5

Para.A2.2.4

RSLMI

Para.A2.2.2

A2.2. Click on the O-view tool bar button to view requested work orders for aircraft requiring reseals. This will display a list of reseal PWOs for the specific aircraft owner requested in paragraph A2.1.1.

A2.2.1. To display an individual PWO and change the status, highlight it and press OK (figure 4).

A2.2.2. Enter the job plan code from table 1 in the "Job Plan" field.

A2.2.3. Enter "CM" in the "Work Type" field.

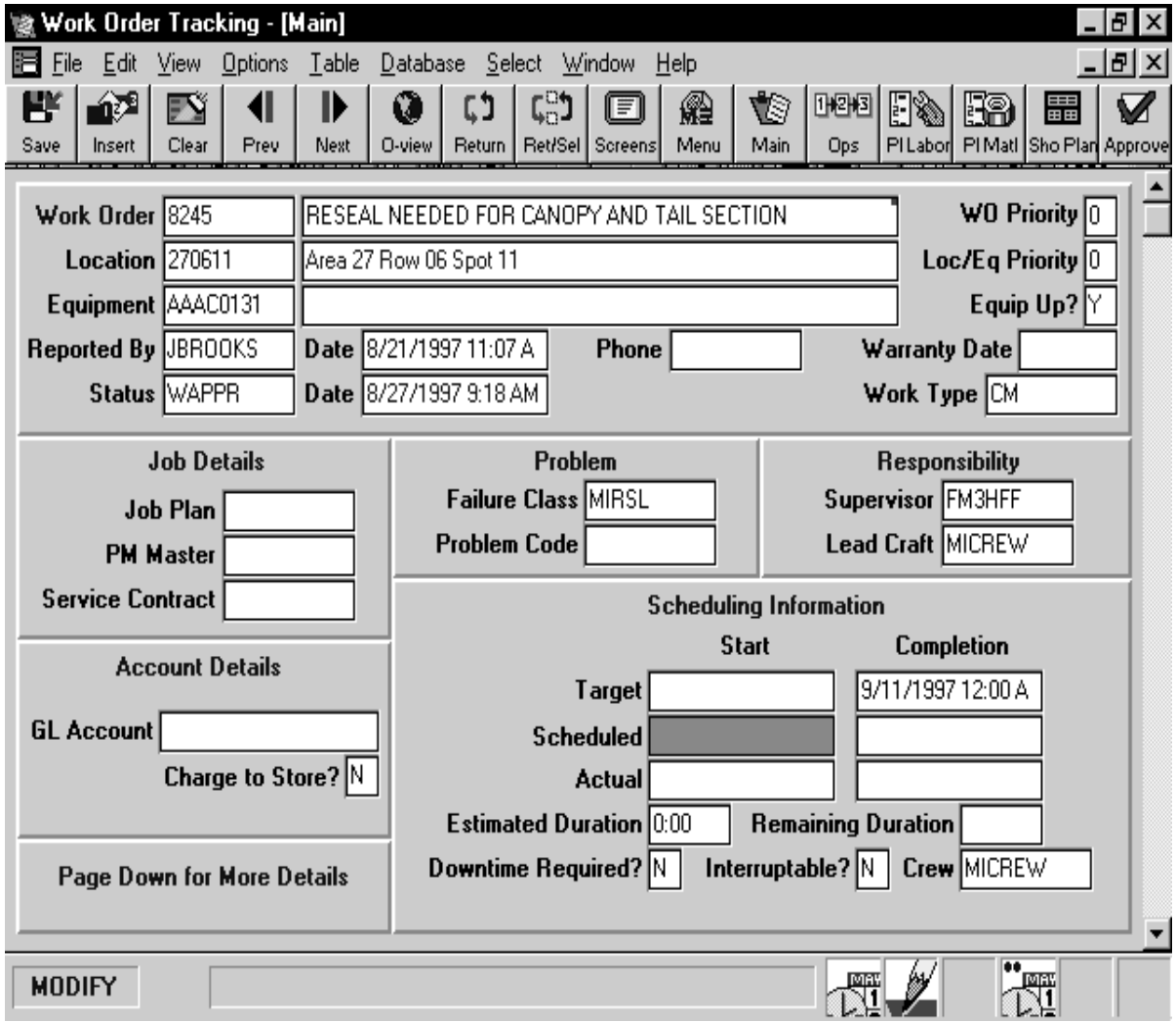
A2.2.4. If funding has been approved or is available, enter the work loader code, i.e. FM1, FM2, or FM3 plus "RS" in the "Supervisor" field.

A2.2.5. Change the status to WMATL, table 2 (Options ÆChange Status ÆWait for Material ÆCurrent record ÆOK).

A2.2.6. Save the record by clicking on the Save tool bar button or press the F5 key.

A2.2.7. Repeat the steps in paragraphs A2.2 through A2.2.6 for each PWO to be approved.

Figure A2.2. Holding a Reseal PWO for Funding.



A2.3. Follow the steps in paragraphs A2.1 through A2.2.4.

A2.3.1. Enter the work loader code, i.e. FM1, FM2, or FM3 plus “HFF” in the “Supervisor” field if funding has not been approved or if reseal is not to be done presently but the work order is not to be canceled.

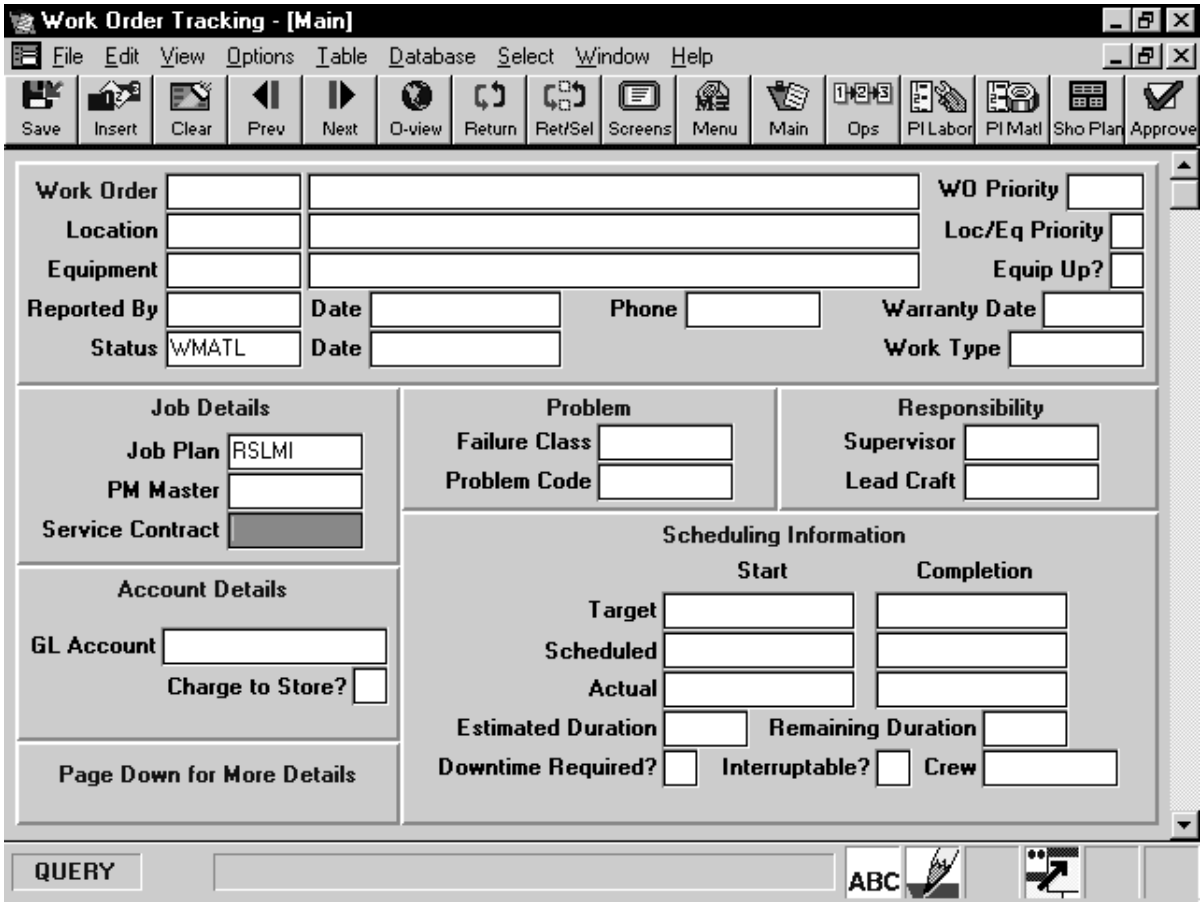
A2.3.2. Save the record by clicing on the Save tool bar button or press the F5 key.

A2.3.3. A display of all aircraft that are to be resealed at a later date can be generated by entering “%HFF” in a blank Work Order Tracking screen, press Enter, and click on the O-view tool bar button.

NOTE. The “%” symbol can be replaced with a work loader identifier to display those PWOs held for funding for that work loader.

Attachment 3
INITIATING RESEALS

Figure A3.1. Identifying Reseale PWOs.



A3.1. See paragraph 4.7 for scheduling reseal work orders.

A3.2. Enter “WMATL, table 2 in the “Status” field. This will extract only those work orders for which FMW has the funds.

A3.3. Enter the applicable job plan code from table 1 in that field, and press Enter.

A3.4. Click on the O-view tool bar to display a list of all aircraft funded for each category of reseal (job plan code).

A3.5. If necessary to display an individual PWO, highlight it and press OK.

A3.6. Using the O-view display list, highlight work orders to be scheduled for production and press OK.

A3.7. Initiate PWOs (Options ÆChange Status ÆInitiate ÆSelected records ÆOK).