2-3. Ground Precautionary Messages (GPM) (cont)

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PROBLEM:
A. Description. Inspection of USAREUR M939 series trucks retrofitted with the anti-lock brake system (ABS) modification discovered the fact that contractor teams mistakenly applied an air line and its fittings at the location of the primary air tank which should have been connected to the secondary air tank. At the same time, application teams generally left the existing air connections to the secondary air tank untouched. The proper ABS MWO procedure calls for disconnecting an existing red tube attached to the secondary air tank and reconnecting that line to the primary air tank as its source of air. Into its place, the MWO calls for installation of a new line coming from the ABS "double-check valve # 7" to be connected to the secondary air tank. The mistake basically reverses those two connections. It installed the "new line" to the primary air tank instead of the secondary air tank. It then left the secondary air line as found. However, the M939 brake system still functions safely despite these reversed connections. M939 trucks accidentally mis-plumbed during ABS retrofit reportedly passed all QA inspections. Post-application driving and braking tests also failed to reveal any operational problems with the truck's braking system. Only a total, catastrophic loss of system pressure from the secondary air tank exclusively could result in an unsafe braking condition. System engineers and safety technicians deem the probability of such an occurrence happening as "improbable" or "unlikely to occur but possible". Trucks affected do not revert back to M939 FOV's 40 mph speed restrictions per safety of use messages SOUM 98-07, "Safe Operating Speeds for M939 Family of Vehicles". Trucks affected also remain operationally ready as is. Repaired trucks do not require re-testing of the vehicle's brake system as brakes themselves are not affected by these air line repairs.

B. Expected results if failure occurs.

(1) Total loss of air from the primary air tank (only) causes M939's spring brakes to apply, once air pressure drops below 60 psi. Front axle brakes continue to work normally.

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(2) Total loss of air from the secondary air tank (only) will result in improper function of the forward relay valve. This, in turn, limits driver braking to the right side rear axles. Left side of the intermediate axle and rear axle brakes will not function. Front brakes will not function. Result would be uneven braking with a momentary loss of vehicle control possible. Probability of such an occurrence happening, however, is improbable or unlikely to occur.

(3) With or without the plumbing error, a total catastrophic loss of both primary and secondary air pressure causes the vehicle's spring brakes to engage. This, in turn, automatically stops the vehicle as pressures in both tanks plummet below 60 psi.

USER ACTIONS:

NOTE

The following instructions apply to all units worldwide with M939 series trucks that have been modified by MWO 9-2320-272-35-1. This MWO was initially issued as MWO 9-2320-272-50-1, "M939 Brake Stabilization Program (Retrofit of Anti-lock Brake System (ABS) for M939 FOV)".

A. Inspection. Within 60 days of receipt of this GPM, unit maintenance personnel are directed to inspect ABS equipped M939 series trucks at the location of the primary and secondary air tanks (below cab, vehicle right side) for correct plumbing. If found to be incorrect, units are directed to schedule repairs at time of the next semi-annual Preventive Maintenance Checks and Services (PMCS) for the truck(s) affected. Units may opt to accomplish the repair during any other routine service, at the discretion of the unit. For USAREUR-based units, repair kits will be distributed directly and automatically through AMC-Europe. Automatic distribution in Europe is based upon RAILS data of vehicles possibly affected by the mis-plumbing. All other units worldwide that find this difficulty may order one kit per identified truck through TACOM's M939 Team MWO Coordinator, AMSTA-LC-CHM, ATTN: James Curtis, curtisj@tacom.army.mil, DSN 786-6484 or Commercial (586) 574-6484. Such units are also asked to identify the total number of M939 series trucks affected/kits required within 60 days of receipt of this GPM and to schedule needed repairs for the next semi-annual PMCS. See paragraph E, below, for post-fix "reporting" instructions. See below for "Supply Status" and additional kit ordering instructions.

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(1) To assist in determining correct or incorrect air connections, artwork illustrating both may be found at the Army Electronic Product Support (AEPS) website under "Ground Precautionary Messages." See note below for specific directions within AEPS.

NOTE

Access Army Electronic Product Support at https://aeps2.ria.army.mil for artwork. Once AEPS is accessed, go to the "Safety First" tab. Click on the "Ground Precautionary Message" drop down menu. Select "All GPMs" on this site, and scroll to GPM 03-007. "M939 anti-lock brake system modification work order plumbing error and fix" will be clearly listed. Accessing the AEPS publication of this GPM includes access to the needed artwork.

(2) If AEPS access is not available, artwork can also be obtained by contacting the nearest TACOM logistics assistance office or by contacting TACOM, AMSTA-LC-CHM, at DSN 786-6395.

B. Proper plumbing. Correctly or incorrectly installed air lines are easily identified. First, locate the 6-foot cross-chassis hose connected to the double-check valve # 7 at the location of the spring brake air reservoir on the vehicle's left side. If correctly installed, that 6-foot hose will be connected to the lower secondary air tank tee. If improperly installed, the same hose will be connected to the upper primary air tank. In addition, the truck's original "red" tube, when correctly installed for ABS, is connected on one end to the upper primary air tank as shown in the AEPS artwork (opposite end should already be connected to ABS' new front relay valve w/ECU).

NOTE

The two crossed air lines readily stand-out in the AEPS artwork as "A" for the "hose to double-check valve # 7" and "B" for "existing red tube". Artwork illustrates how "A" was incorrectly connected to the primary air tank and how "B" was incorrectly connected to the secondary air tank. Correct installation for both "A" and "B" are also presented.

C. Kits. The kits supporting this GPM provide all parts needed for a repair of the plumbing error. These parts have been assembled into a kit, part number WKT1011 (CAGEC: OUKB6). Kit consists of two elbow fittings, three inserts, three sleeves, and the 6-foot length of air hose for use in connecting the double check valve # 7 with the secondary air tank if needed. In many instances, the 6-foot length of air hose will not have been shortened and can be re-installed to the secondary air tank without the need for any inserts, sleeves, or hose replacements.

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D. Repairs. Repair requires one unit level mechanic 15-35 minutes (depending upon whether the 6-foot air hose also needs replacement). Task calls for disconnecting fittings at the primary and secondary air tanks and reconnecting all hoses and fittings in proper sequence. All parts needed are contained in the repair kit. No other hardware or special tools are required. Complete fix instructions with illustrations are included with each kit. Instructions are also included in the AEPS website supporting this GPM.

E. Reporting. Reports should consist of the vehicle serial numbers and registration numbers of trucks repaired and the UIC of the unit affected. All trucks affected and work completed will be entered into RAILS for program oversight as well as for reimbursement purposes. For Europe-based units, ABS retro-fix reports should be sent as follows:

(1) Corps and divisional units should forward their reports of fixes completed to their unit brigade and division MWO coordinators. Reports should consist of the vehicle serial number and registration number of trucks repaired.

(2) Non-divisional units should forward their reports to their respective brigade MWO coordinators.

(3) Brigade MWO coordinators will consolidate their subordinate level reports and forward consolidated reports to their respective division and corps MWO coordinators with a copy furnished to the USAREUR MWO coordinator as well as to TACOM QA coordinator. The email address of the USAREUR MWO coordinator is reginald.dionne@200mmc.21tsc.army.mil. The email address for the TACOM QA coordinator is callahat@tacom.army.mil.

(4) Unit maintenance supervisors for all non-Europe units affected by this GPM due to mis-plumbing are directed to report all affected vehicle serial and registration numbers of trucks repaired to Mr. Terry Callahan, TACOM QA, at callahat@tacom.army.mil. Reporting work completed is for purpose of entering and tracking equipment affected and fixes completed through RAILS.

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TACOM/PM/AMC ACTIONS:
TACOM will provide the following information as part of follow-up actions.

(1) Publication changes: No publication changes are required as a result of these inspections or repair actions.

(2) TACOM will provide repair kits free-issue. USAREUR units will automatically receive one kit per truck impacted by mis-plumbing based upon RAILS data. All other units must notify TACOM and request kits.

(3) PM LTV will coordinate kit distribution and other administrative matters with major commands.

(4) AMC-Europe will coordinate distribution of kits to USAREUR units.

(5) TACOM QA will maintain RAILS-based master records of all work completed/vehicles affected.

(6) Additional assistance from the MSC/PM/PEO/WSM or AMCE-E can be provided by contacting one of the POCs listed.

SUPPLY STATUS:
Free kits for all trucks found to have this difficulty are to be available by March 2003. Kits are identified under P/N WKT1011 (CAGEC: OUKB6) as "M939 plumbing error repair kit". Parts included in this kit help facilitate repairs by accommodating a '"worst case" fix. Not all parts included will be required for every application. In USAREUR, kits will be distributed automatically to units by AMC-E. All other units (CONUS and OCONUS) that find this difficulty may order one kit per identified truck through TACOM's M939 Team MWO Coordinator, AMSTA-LC-CHM, ATTN: James Curtis, DSN 786-6484, Commercial (586) 574-6484, E-Mail:curtisj@tacom.army.mil.

END OF MESSAGE