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GENERAL DYNAMICS
Land Systems Division
P.O. Box 527, Warren, Michigan 48090

Inter-Office Memo

HJR/dr:85-128
7 November 1985

To: A. DeStefano, R. Fish, W. Fitzgerald, J. Heibeck,
B. Hudson, J. Lasser, J. Roach

xc: F. Bryan

Subject: Cleaning Procedures for TST windsensor

Enclosure: 1) IOM, DHB/85-098, Dated 23 October 1985.

1. The attached letters explain the position of GDLS Logistic Engineering and TSI in cleaning of the windsensor.
2. This information is being provided in case you become aware that units are removing the cover to clean windsensor. This should provide enough information to discourage improper cleaning of the windsensor.


H. J. Rinna
Supervisor
Field Activities

1000

WFB
FB
LVC
RJF
DCF

To: J. J. McCuen

GENERAL DYNAMICS

Land Systems Division

P.O. Box 527, Warren, Michigan 48090



LARRY CLARKSON
HANK RINNA
RE: OMEGA FO CALIBRATION
Comments

Inter-Office Memo

DHB/85-098
23 October

To: N. W. Hammes

xc: R. G. Hill, R. L. Herrick, W. A. Piotrowski

Subject: Direct Support Cleaning Procedures for the Thermo Systems Inc. (TSI) Crosswind Sensor

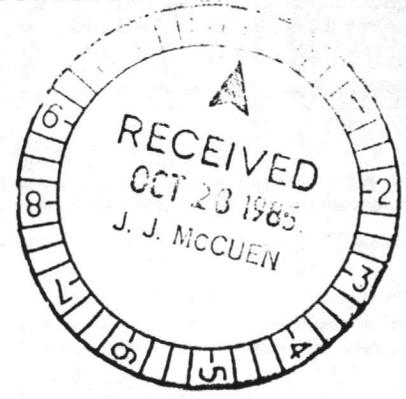
- Reference:
- 1) IOM CC/85-473 Dated 4 October 1985
 - 2) IOM JLD/vb: 84-597 Dated 1 August 1984
 - 3) Letter Dated 30 September 1983 To C. Vessey from S. Kildahl of TSI
 - 4) Letter Dated 17 September 1984, Subject: Crosswind Sensor Cleaning Procedures.

- Enclosures:
- 1) IOM CC/85-473 Dated 4 October 1985
 - 2) IOM JLD/vb: 84-597 Dated 1 August 1984
 - 3) Letter Dated 30 September 1983 To C. Vessey from S. Kildahl of TSI
 - 4) Letter Dated 17 September 1984, Subject: Crosswind Sensor Cleaning Procedures.

1. The direct support cleaning procedure being propagated by GDLS Field Service Representatives is inconsistent with direction provided by the Government and is considered an unacceptable field maintenance action by Thermo Systems Inc. (TSI).
2. Initial task analysis performed by Logistics Engineering included a similar cleaning procedure to be performed by direct support maintenance. Government rejection of the task was based upon TSI concern over removal of the cover assembly from the sensor head as it contains the ion emitter. Removal and replacement of the cover assembly disturbs the relationship of the ion emitter to the detector plate. A wind tunnel, available only at Depot level, is required to recalibrate the sensor after the cover is installed.

D. H. Budai
D. H. Budai

DHB/kzb



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Land Systems Division
P.O. Box 527, Warren, Michigan 48090

CC/85-473
4 OCT 1985

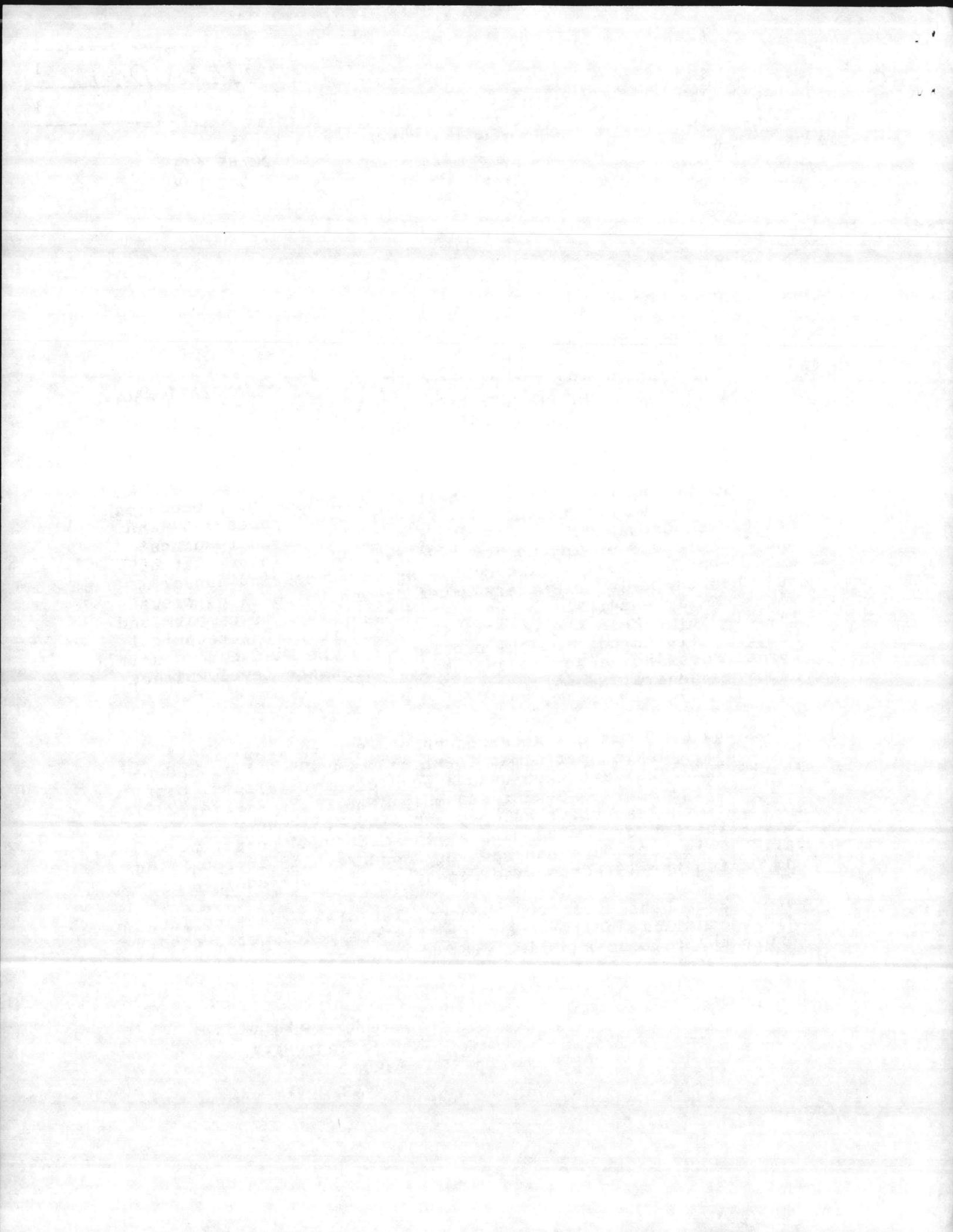
TO: C. CROOMS
XC: N. C. BOZICK, L. V. CLARKSON
FROM: R. BROTEMARKLE
SUBJECT: CLEANING OF THE TSI CROSSWIND SENSOR AT ORGANIZATIONAL,
DIRECT SUPPORT AND GENERAL SUPPORT LEVELS OF
MAINTENANCE WHILE IN THE FIELD

1. The tank crews would perform their troubleshooting procedures which are layed out in the TM-9-2350-255-10-3 pages 3-67 and 3-186 when Crosswind Sensors would fail, (erratic readings and failure # 3 during Computer Self-Test). [Note: Battery water should be used while servicing the Crosswind Sensor, but when there is no Battery water around to be used, crews will use tap water which has a very high level of calcium and lime in it]. When the prescribed procedure by the technical manual fails to correct the problem with the Windsensor, unit turns Crosswind Sensor to the next maintenance level, Direct Support, General Support.
2. GDFSR and DS/GS maintenance personnel removed plug (part# 12282524), packing performed (NSN: 5330-00-089-9981), and pad (part# 12282525) and then used a Lens cleaner (alcohol base) and pencil eraser on Sensor Assembly (NSN: 1220-01-094-3272). To remove the excessive calcium and lime built-up which covers the Sensor, thus causing the Crosswind Sensor to fail. This procedure has had very good results in repairing and making the TSI Crosswind Sensor serviceable again.

Note: Pour Lens cleaner on Sensor, let cleaner absorb into calcium and lime built-up and lightly use pencil eraser to remove the calcium and lime from the Sensor.

ORIGINAL SIGNED
RICK BROTEMARKLE
FSR
Amberg, Germany

RB/mn



GENERAL DYNAMICS

Land Systems Division

P.O. Box 527, Warren, Michigan 48090

Inter-Office Memo

JLD/vb: 84-597
1 August 1984

To: M. Stetkiw
xc: G. F. Klaus, D. F. Turner, R. Miller, W. Reed
Subject: TSI Incorporated
Crosswind Sensor Cleaning Procedures

GDLS Logistics Engineering is researching several cleaning procedures for the Crosswind Sensor.

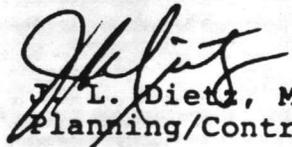
The procedures currently under consideration are as follows:

1. Clean Crosswind Sensor at Crew Level using squeeze bottle with water and a cleaning brush during sub freezing weather. Cleaning brush would become part of Tank BII.
2. Clean Crosswind Sensor at the Organizational Maintenance Level using a pipe cleaner to clean the sensor board and a cleaning brush with water to clean the needle.
3. Clean Crosswind Sensor at the Direct Support Maintenance Level by removing top cover and cleaning with a cotton swab and freon.

TSI is requested to provide comments on the above procedures and to provide their "firm" recommendations for an effective cleaning procedure(s) for the Crosswind Sensor.

Your response by 30 August 1984 will be appreciated.

If further information is required, please contact D. F. Turner at (313) 978-5308.


J. L. Dietz, Manager
Planning/Control & Subcontracts

Concur: 
J. J. Eccles
Deputy M1 Program Manager

DFT



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TSI INCORPORATED

500 CARDIGAN ROAD • P.O. BOX 43384 • ST. PAUL, MINNESOTA 55164 U.S.A.
(812) 483-0900 • TELEX: 297-462 • CABLE: THERMOSYS

September 30, 1983

Mr. Chris Vessey
General Dynamics
Land Systems Division
25999 Lawrence
Centerline, MI 48015

CIMS: 424-05-08

Dear Chris:

In reference to our telephone conversation today, I am enclosing the proposals for changes to the current M1 Tank Wind Sensor cleaning procedures made by TSI following our last Germany trip. Copies of the -10 manual pages referenced are also enclosed for your benefit.

I must emphasize to you, Chris, that these are standard cleaning procedures for an operational unit. A wind sensor that has been neglected over a long period, with associated heavy contamination, will require an extended immersion in water to attempt to loosen the contamination. If this fails to restore the unit to a serviceable condition, it must be returned to TSI for repair. Again, as before, I must stress that UNDER NO CIRCUMSTANCES does TSI currently recommend removal of the top cover assembly in the field.

Lastly, the brush mentioned for use during freezing weather is an artist's brush modified to include a plastic handle that will allow insertion only to a specific point. This brush has been locally manufactured at TSI for field use.

TSI further recommends that the weekly and before-fire cleaning intervals currently reflected in the -10 manual PMCS remain unchanged, as long as they are closely followed by all crews in the future.

I hope these documents will be of assistance to you, Chris. Feel free to contact me with any questions you may have regarding this matter.

Sincerely,

Scott Kildahl
Technical Representative
Defense Systems of TSI

SK/sm

Enc: manual pages





cc. M. WILLIAMS



TSI INCORPORATED 500 CARDIGAN ROAD • P.O. BOX 43394 • ST. PAUL, MINNESOTA 55164 U.S.A.
(612) 483-0900 • TELEX: 6879024TSIUS UW or 669887TSI UW

September 17, 1984

Mr. F. J. Schmiede
General Dynamics
Sterling Defense Plant
6000 E. Seventeen Mile Road
Sterling Heights, MI 48078

RE: Letter FJS:84-306 dated August 13, 1984

Subject: Crosswind Sensor Cleaning Procedures

Ref: Letter SK:83-930 Procedure Package Cover Letter
Letter CIMS:424-05-08 Procedure Package Cover Letter
TSI Drawing MSK 201-018 Cleaning Procedure Diagram

Dear Rick:

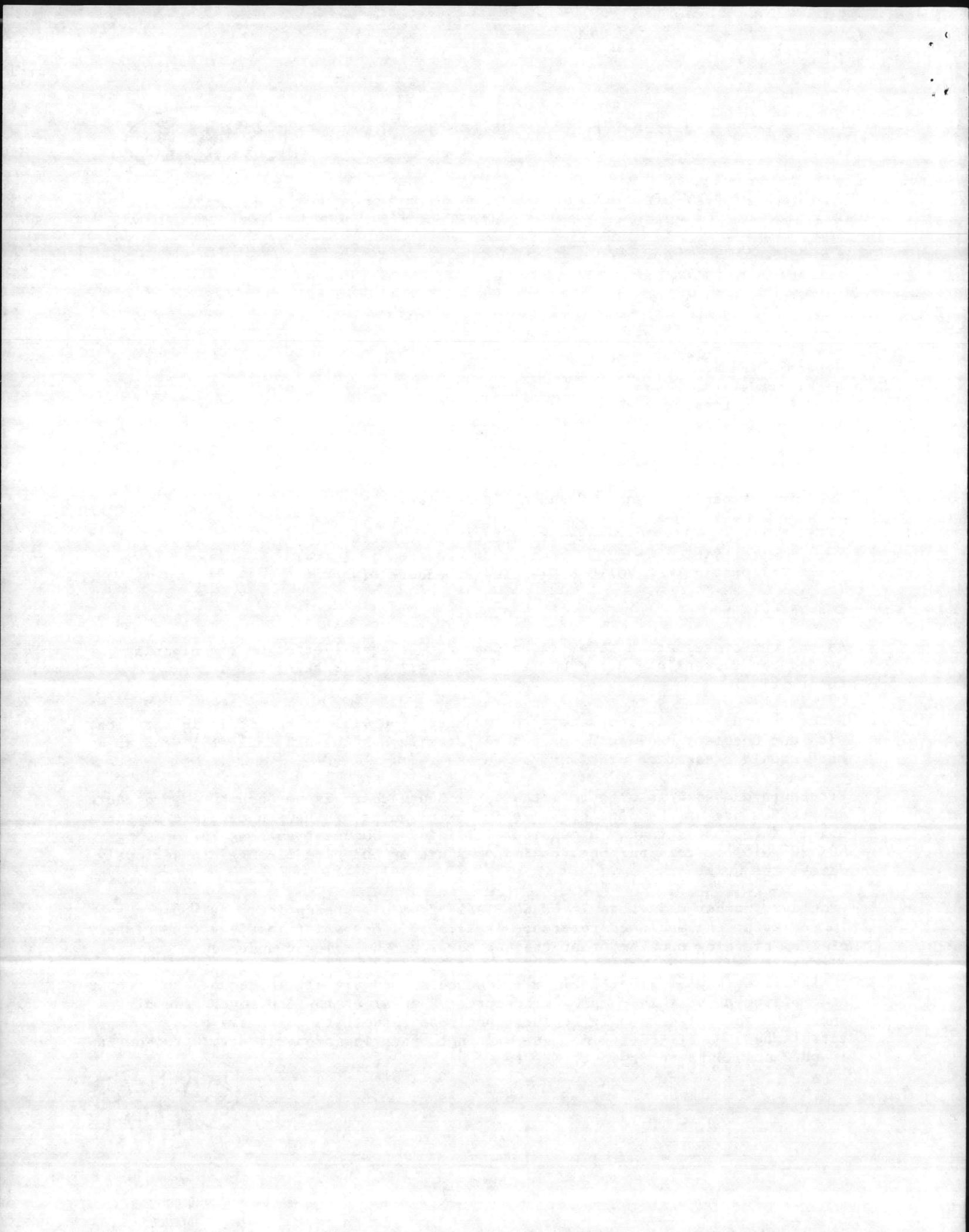
As per our conversation today regarding your telecopy letter on the cleaning procedures currently under consideration, I will offer the following information.

Procedure number 1 is completely acceptable. You will notice it is in agreement with our documented cleaning procedure (Drawing MSK 201-018 enclosed), and as such should present no problems.

Procedure number 2 is also acceptable, although there is no documented procedure as yet for use of the pipe cleaners in the cleaning of the sensor plate on the unit. I recommend that you consider utilizing a document such as TSI Drawing MSK 201-018 for this purpose, as improper use of the pipe cleaner can seriously damage the unit.

Procedure number 3 is totally UNACCEPTABLE from our standpoint. As you can see in reviewing the enclosed reference letters, TSI has maintained over the history of the "cleaning problem" that the top cover not be removed under any circumstances while the unit is in the field. The equipment and expertise available at any level of field maintenance are completely inadequate for proper accomplishment of this complex procedure. Removal of the top cover assembly should be accomplished only by the depot repair facility currently being established. Until that time, any unit not operating properly after procedures 1 and 2 should be returned to TSI for repair.



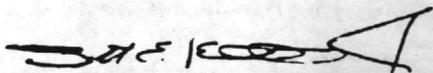


Mr. F. J. Schmiede
Page 2
September 17, 1984

The above comments will constitute our firm recommendations for a cleaning procedure, as per your letter.

Please feel free to contact me with any further questions.

Best regards,



Scott Kildahl
Product Support Engineer

SK:cjh



