Wulfsberg Electronics Division
A Chelton Group Company
6400 Wilkinson Drive Prescott, AZ 86301 USA
Tel: (520) 708- 1550 Fax: (520) 541-7627

November 18, 1999

Attn.: Michael Murphy
Manager Technical and Administration Support Staff, ANM-103L
Federal Aviation Administration
Los Angeles Aircraft Certification Office
3960 Paramount Boulevard
Lakewood, California 90806-2425

Subject: Minor Change to VCS 40A VHF Communication System.

Ref 1: FAA TSO Authorization Letter dated SEP 01, 1999

Gentlemen:

We would like your concurrence with an intended "MINOR" change to our VCS 40A VHF Communication System. Wulfsberg Electronics Division intends to add 8.33KHz channel spacing functions to our existing (VHF Communications model series TSO'd to TSO-C37c and TSO- C38c). We are in the process of developing the 8.33Khz channel spacing modification to our VHF radio system to also allow utilization in Europe. Wulfsberg Electronics Division currently holds TSO Authorization for the VCS 40A system comprised of the VHF Receiver/Transmitter (VCS-401B) and Control Display (CD-402B). (See Ref. 1. Page 2)

The VC-401B and CD-402B are major components in the VCS 40A VHF Communications System. The cockpit mounted CD-402B Control Display controls the remote-mounted VC-401B VHF Communications Transceiver which provides the aircraft side of VHF communications between the aircraft and Traffic Control. The variations for the series of equipment are shown below.

Options for VC-401B TRANSCEIVER 064-1047-xx		32	01	12	31	22	21	50 *	51 *	52 *	53 *	54 *	55 *	60 *	61 **	62 *	63 *	64 *	65 *
Frequency Range	136.975 MHz	X		X		X		X		X		X		X		X		X	
	151.975 MHz		X		X		X		X		X		X		X		X		X
Audio & Sidetone Levels	10 mW	X	X					X	X					X	X				
	20 mW			X	X					X	X					X	X		
	40 mW					X	X					X	X					X	X
8.33 kHz	Fixed							X	X	X	X	X	X						
	Switchable													X	X	X	X	X	X

* New 8.33KHz channel spacing capable transceivers
** New 8.33KHz channel spacing transceiver intended for fully populated version testing

ACKNOWLEDGEMENT
NOTIFICATION OF MINOR CHANGE
DATE 12/7/99 TSO-C 37c, 38c
TECHNICAL SUPPORT SPEC Marie Smith
FEDERAL AVIATION ADMINISTRATION
Los Angeles Aircraft Certification Office, ANM-103L

Options for CD-402B Control Display 071-1341-XX		00	01	02	03	04	05	06	07	16	50 **	51 *	52 *	53 *	54 *	55 *	56 *	56 *	58 *
Bezel	Black	X		X		X		X			X		X		X		X		
Color	Gray		X		X		X		X	X		X		X		X		X	X
Panel Lighting	5V			X	X			X	X	X			X	X			X	X	X
	28V	X	X			X	X				X	X			X	X			
	AC Gnd Iso.									X								X	
Options	Volume	X	X	X	X						X	X	X	X					
	8.33Khz SW										X	X	X	X	X	X	X	X	X

* New 8.33KHz channel spacing capable Control Displays

** New 8.33KHz channel spacing Control Display intended for fully populated version testing

This change will upgrade the technology from through hole printed circuit boards and components to surface mount printed circuit boards and components also we will create new dash numbers for the LRUs that have additional functions that allow 8.33KHz capability.

Deviations from the currently approved TSO include the following:

- DO-186A Section 2.0 Minimum Performance Standards to be used in place of DO-156 and DO-157
- Additional FM Noise Immunity requirements per ICAO Annex 10 amendment 69 and EUROCAE ED-23A will be used
- DO-160C Environmental Conditions and Test Procedures will be used instead of DO-160A
- Environmental Qualification beyond DO-160C will include tests defined in draft TSO-C37e 3.b.(1) and (2) and draft TSO-C38e 3.b.(1)
- There will be an addition of a function beyond TSO-C37c and TSO-C38c that will allow the selection of the 8.33 KHz channel spacing mode of operation. ICAO Standards and Recommended Practices channel spacing as defined in draft TSO-C37e and TSO-C38e paragraph 3.d.(3) will be adhered to
- Marking to include " 8.33KHz Capable "
- Current units have software certified to DO-178A new technology units will have software certified to DO-178B

Since these changes do not result in any Form, Fit or Function changes of the original VCS 40A system, the changes to make new technology original variations and new 8.33KHz capable units will be classified as MINOR. These changes will be processed as an addendum to the existing TSO-C37c and TSOC38c for the VC-401B and CD-402B LRUs.

Please contact me, at (520) 708-1510 or Don Blessing at (714) 675-1126 for further information.

Sincerely,

James Makela

(Certification Manager Wulfsberg Electronics Division)