Autostart AS705S V1.00 – V1.06(a)
Autostart AS710S/AS720S/AS730S V1.00 – V1.09(a)
PC Communication and Software (AS7CK V1.07)

MURPHY

Please read the following information before installing. A visual inspection of this product for damage during shipping is recommended before installation. It is your responsibility to ensure that qualified mechanical and electrical technicians install this product. If in doubt, please contact your local Murphy representative.

1 INTRODUCTION

All Autostart AS705S, AS710S and AS730S controls fitted with firmware versions V1.0 or higher have a serial communication port, accessed through a 9 way D-connector at the unit's rear. This port, when used with other hardware accessories, may be used to set up a communication link between an Autostart and a PC running Murphy software model AS7CK. This software may then be used for the monitoring, control and programming of any Autostart in the range.

The information in this document is current for:-

- AS705S units with firmware V1.00 – V1.06(a)

- AS710S and AS730S units with firmware V1.00 – V1.09(a)

- (obsolete) AS720S units with firmware V1.00 – V1.05

- AS7CK software version V1.07

Firmware and software versions before or after these revisions may contain more, less or reconfigured features. If in doubt, please contact our technical sales department for up to date product information and compatibility details.

Further details on specification, installation and operation of the Autostart range can be found in the following documents:-

Doc. ref.	Title
ms5258	AS705S bulletin
mi5396	AS705S installation and wiring
ms5259	AS710S bulletin
mi5262	AS710S installation and wiring
ms5261	AS730S bulletin
mi5264	AS730S installation and wiring
mi5265	AS7xx installation section B: programming

The above are available on request from your Murphy representative, or from the 'products' section of our website **www.fwmurphy.co.uk**

2 HARDWARE

2.1 Hardware Accessories

Several standard communication components are available, combinations of which allow the link to be 'local' (an RS232 link of less than 10 metres) or 'remote' (by use of RS232 modems and the telephone network):-

Model No.	Description
AS7CA	9 way to 9 way serial (null modem) lead, for local communication where the PC has a 9 way COM port.
AS7CB	9 way to 25 way serial (null modem) lead, for local communication where the PC has a 25 way COM port.
AS7CC	RS232 interface unit for local communication only
AS7CD	RS232 interface unit for remote communication, via modems and the telephone network. AS7CD may also be used for local communication.
AS7CK	Autostart - PC communication software (V1.07)

The AS705S only supports a local type link. The AS710S, AS720S and AS730S support either local or remote modem links. All applications require one interface unit (of the correct type) and software model AS7CK installed on a PC. Local communication also requires one of the two serial leads listed above (AS7CA or AS7CB).

'Remote' communication requires the use of two modems and modem leads (not available from Murphy) and a connection to the public switched telephone network (PSTN). *Note: modem leads are normally supplied with each modem, and are NOT the same as the serial leads used for local communication. The modem lead at the Autostart/generator site must have a 9 way D-connector, allowing connection to interface unit AS7CD.*

In order to consistently bring you the highest quality, full featured products, we reserve the right to change our specifications and designs at any time.

2.2 Hardware Connection

Typical connections for local and remote (modem) systems are shown at the foot of the page.

2.2.1 Local communication (distances up to 10 metres)

Over short distances, the Autostart may be simply connected to a PC or laptop using interface unit AS7CC and serial lead AS7CA or AS7CB (see diagram below left). To connect up the system:-

1. Ensure that both Autostart and PC/laptop are powered down.

2. Take interface unit AS7CC, and plug the end marked 'Autostart' (or 'AS7xx') into the 9-way D-connector socket at the Autostart's rear. Tighten the two securing screws.

3. Plug the (9-way end) of the serial lead into the interface, at the end marked 'PC'. Connect the other (9 way or 25 way) end of the lead into a spare serial (COM) port on the PC/laptop.

4. The Autostart may be wired into the control panel as for normal operation. Alternatively, make the following minimum electrical connections:-

   - Positive DC supply to pins 3, 4 and 11
   - Negative DC supply to pins 1 and 28.

5. For laptop computers, ensure that the mains AC supply is disconnected (see caution below). Switch on the PC or laptop, power up the Autostart into Auto mode, and run the software (see section 3.2).

WARNING: For Autostart communications, laptop computers MUST be used in stand-alone 'battery' mode only, with the AC power supply disconnected. Failure to disconnect the AC supply may result in damage to both laptop and Autostart. The damaging electrical currents can be caused by voltage differences between the Autostart and laptop, where the laptop AC power supply is ungrounded.

2.2.2 Remote (Modem) Communication

Two modems are required, one connected to the Autostart (at the generator site) and one connected to the PC (at the remote 'control' site).

The modems must be RS232 and Hayes AT compatible, and will also usually need to comply with the technical and legal requirements of the connected telephone network. The Autostart/ generator site modem should ideally use an uninterruptable power supply (usually a battery/DC system).

Connection at the generator site:-

1. Ensure that both modem and Autostart are powered down.

2. Take the interface unit AS7CD, and plug the end marked 'Autostart' or 'AS7XX' into the 9-way D-connector socket at the Autostart rear. Tighten the 2 securing screws.

3. Connect the modem lead between interface and modem.

4. Connect up the modem's telephone and power supply leads, as specified by the modem manufacturer.

5. Power up the system: modem first, then Autostart.

At the PC control site, connect the modem to the PC, telephone network and power supply in accordance with the manufacturer's instructions. (This may not be necessary if the PC is already fitted with an internal modem card. Note, however, that the PC software will only operate with modems configured on serial ports COM1 or COM2: the software does not support internal modems configured with COM3 or COM4 port settings.)
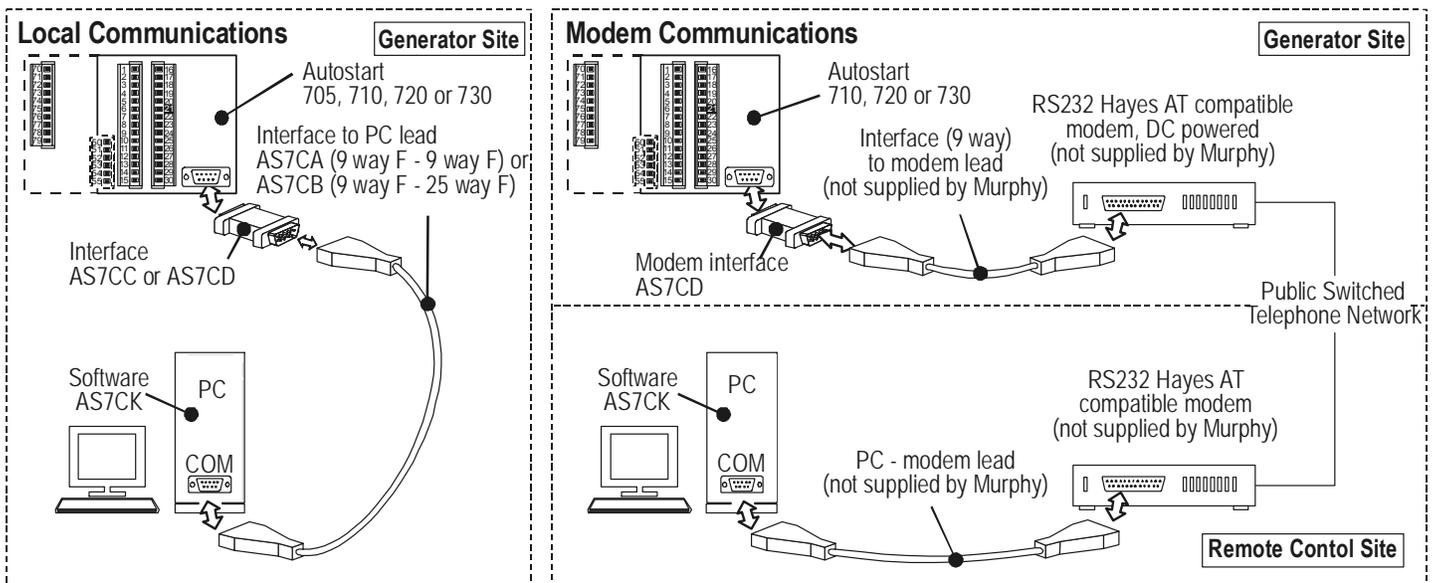
3   PC SOFTWARE

3.1 Software Installation

Before any communication can occur between Autostart and PC, software model AS7CK must be installed on the PC and correctly configured. All the instructions following relate to version 1.07 of this software, released January 2001.

Software AS7CK is designed to run on an IBM compatible PC running Microsoft Windows® 3.1, 3.11, '95 or '98. The software is a DOS based program supplied on one 3.5", 1.44Mb floppy disk, or available (free of charge) from the 'downloads' section of our website: **www.fwmurphy.co.uk**. The software can be used with modem/serial port settings of COM1 or COM2: note that COM3 or COM4 port settings are **not** supported.

Autostart to PC Connection

Local Communications | Generator Site
- Autostart 705, 710, 720 or 730
- Interface to PC lead AS7CA (9 way F - 9 way F) or AS7CB (9 way F - 25 way F)
- Interface AS7CC or AS7CD
- Software AS7CK
- PC
- COM

Modem Communications | Generator Site
- Autostart 710, 720 or 730
- RS232 Hayes AT compatible modem, DC powered (not supplied by Murphy)
- Interface (9 way) to modem lead (not supplied by Murphy)
- Modem interface AS7CD
- Public Switched Telephone Network
- Software AS7CK
- PC
- COM
- RS232 Hayes AT compatible modem (not supplied by Murphy)
- PC - modem lead (not supplied by Murphy)
- Remote Contol Site

V1.07 PC software is able to support all post autumn 1997 AS705S units, and AS710, AS720S and AS730S units with firmware versions V1.00 or higher. Full details of compatibility can be found in the `readme.txt` file that opens automatically after software installation (see below).

To install the software:-

- Insert the 3.5" disk into drive A. The installation procedure then depends upon the version of Windows used:-

WINDOWS 3.1 or 3.11:-

- From Windows 'Program Manager' click on **File** and select **Run.**

- Type **A:\Install** in the dialogue box, then click on **OK** or press **Return.**

WINDOWS 95/98:-

- Click on **Start**, select **Run...** .

- Type **A:\Install** in the dialogue box, then click on **OK** or press **Return.**

The install routine asks for confirmation of the drive and directory into which the software is to be copied, and also the Windows 'program group' to be used. If the default settings are confirmed, the software is installed into the directory **C:/Murphy/AS7v1_07** (on the PC hard drive) and is set up to operate from a program group called **AS7 Communications**.

At the end of the installation, a 'readme' text file opens automatically, giving the latest release notes about the software. The `readme.txt` file should be read thoroughly; it contains up to date information about the software/Autostart features, operation and compatibility. The `readme.txt` file can be closed by selecting **File|Exit**.

When the software is run for the very first time, it automatically starts a 'configure communications' menu, which is used to set up the software for use with the correct PC communication port - see section 3.9 below for full details.

3.2   Starting the Software

Once the software has been installed, it can be run as follows *(Note: the Windows group and program names given below are the default installation names. If other names were entered in the installation routine, use these instead)* :-

WINDOWS 3.1 or 3.11:-

- In Windows 'Program Manager', use the mouse to click on the group named **AS7 communications**.

- Once this Window has opened, click on the icon named **AS7 Communications V1.07**

WINDOWS 95/98:-

- With the mouse, click on **Start**, select **Programs...**, then **AS7 communications** , then **AS7 communications V1.07**

The PC displays an opening screen, confirming the software title and version number, which will automatically clear after 2 seconds.

Before the software starts properly, it needs to configure itself for the 'current unit type'. If a local link exists, the PC software will automatically detect the unit type and configure itself. If no connection is present, the software asks the user to enter the unit type as follows:-

```
Select Autostart type:-
(F1)   AS705 V0.xx
(F2)   AS705 V1.xx
(F3)   AS710 V1.xx
(F4)   AS720 V1.xx
(F5)   AS730 V1.xx
```

Note the distinction between 'old' (V0.xx) and 'new' (V1.xx) AS705S units above. After this initialisation, the program displays the main menu (see section 3.3 below).

3.3   Main Menu

This consists of 6 options. Like other menus in the software, options are selected by use of the PC's function keys (**F1**, **F2**, etc):-

```
Main menu:-
(F1)   Monitor Autostart status
(F2)   Manage Profiles
(F3)   Connect via MODEM to remote Autostart
(F4)   Disconnect MODEM link to remote Autostart
(F5)   Monitor incoming faults
(F6)   Software configuration
(F10)  Quit program
```

When the options above are available for use, they are displayed in green text. Some options may be displayed in *grey* text, indicating that they are not currently available. For example, options **F3**, **F4** and **F5** are only available if the software detects that the PC is connected to a modem.

Function key	Details in section	Description
F1	3.4	*Monitor Autostart Status*
		Used to upload information from the Autostart, in real time, for the remote monitoring and control of the engine or generator
F2	3.5	*Manage profiles*
		Opens the Manage Profiles sub menu, used to edit and manage (open, save, upload and download) Autostart program profiles.
F3	3.6	*Connect via MODEM to remote Autostart*
		Dials out (via a modem) and establishes a communications link to a remote Autostart.
F4	3.7	*Disconnect MODEM link to remote Autostart*
		Disconnects a current communications link.
F5	3.8	*Monitor Incoming faults*
		Puts the PC program in 'standby' mode, ready to record the fault details of remote Autostarts which are dialling in.
F6	3.9	*Software configuration*
		Used to set up the PC software before use
F10	3.10	*Quit*
		To quit the Autostart communications program.

AS705S units do not support options **F3**, **F4** and **F5** above. At the top of *all* menu screens is a single line giving information about the current status of the software. There are four information 'fields', e.g.:-

```
AS710 V1.xx  File: AS710_002.710  local  COM:2
```

From left to right these fields are:-

Current unit type (in light blue)	This setting (AS705S, 710S, 720S or 730S) is set at program start up and determines the range of programming options available.
Current profile name (in yellow)	The currently loaded profile name. The type of file (.705, .710, .720 or .730) should be the same as the current unit type. When the software is first started, '(none)' is displayed. If the current profile has been uploaded from an Autostart (rather than from disk), the name shown is always upload.7xx.
Comm link type (in red)	The current communications mode, 'local' or 'remote' (see section 3.9)
COM: 2 (in dark blue)	The current COM port (see section 3.9).

3.4 Monitor Autostart Status

This part of the software allows the PC operator to monitor the real-time status of a connected Autostart and engine/generator. It also allows limited control over the Autostart and generator.

For the monitoring screen to operate, the Autostart must be switched on and the communication link intact. When the communication link is local, pressing **F1** from the main menu gives immediate and unrestricted monitoring and control. If the link is remote (via modems and the telephone network) the user must first establish a communication link by use of main menu function **F3**: see section 3.6 below.

Whenever the monitoring screen is selected, the PC software attempts to upload real-time measurement data from the Autostart – information such as operating mode, engine status, engine speed, generator frequency, oil pressure, input/output status, etc. This information is then displayed on-screen:-

```
Frank W. Murphy - Autostart Monitoring        Comms Link ■
-------------------------------------
                                       OUTPUTS:
               Unit: AS7xx  Vx.x       ■Fuel
          Site name: ~~~~~~~~~~~~~~~~  ■Start
               Mode: AUTO              ■A800 enable
             Status: Gen on load       ■OP1: ~~~~~~~~~~~~~~~
                     Timer message     ■OP2: ~~~~~~~~~~~~~~~
                     Fault message     ■OP3: ~~~~~~~~~~~~~~~
                                       ■OP4: ~~~~~~~~~~~~~~~
                                       ■OP5: Common alarm
       Engine speed: ~~~~ RPM          ■OP6: Gen.Contactor
     Generator freq: ~~   Hz.          ■OP7: Mains contactor
        Generator V: ~~~  ~~~  ~~~ V AC INPUTS:
        Generator I: ~~~~ ~~~~ ~~~~ A AC ■Remote start
                                       ■Manual start
      Battery volts: ~~.~ V DC         ■Manual stop
   WL charge volts: ~~   V DC          ■Emergency stop
       Oil pressure: ~~~  psi        O ■IP1: oil pressure
       Engine temp: ~~~  deg C       O ■IP2: engine temp.
          Hours run: ~~~~            O ■IP3: ~~~~~~~~~~~~~~~
                                     O ■IP4: ~~~~~~~~~~~~~~~
            Mains V: ~~~  ~~~  ~~~ V AC O ■IP5: ~~~~~~~~~~~~~~~
Esc=Quit F1=Start F2=Stop F3=Reset F4=Load F5=O/P A F6=O/P B F7=Mute
F8=Print F9=Test
```

The above screen varies slightly with different Autostart types, according to the hardware features available, e.g. generator voltage and current monitoring is only available on the AS730S, mains voltage monitoring is only available on AS720S.

As well as the Autostart and generator parameters shown above, particular points to note are:-

Link Status

Shown at the top right hand side of the screen, this gives an indication that communication is in progress. A flashing white square indicates that data is being transmitted; if data communication is lost, the square remains grey in colour.

Function keys

The lower line of the screen displays the (PC keyboard) function keys that may be used to control the remote Autostart:-

Esc (Quit)	Press **Esc** to exit the monitoring/control screen and return to the software main menu.
F1 (Start)	Press this key to give an immediate, automatic engine start: Autostart will run the generator off load, but will automatically load the generator if the mains fails. If this key is pressed when the engine is already running, Autostart takes no action.
F2 (Stop)	Press **F2** to stop the engine. This key has no effect if a site mains fail or remote start condition is present (and the Autostart is running the generator on load).
F3 (Reset)	May be used to reset a shutdown fault condition, provided that the Autostart is in Auto mode. Faults which occur in Manual mode cannot be remotely reset.
	WARNING: This key should only be pressed if the reason for the displayed fault has been established and corrected. When **F3** is pressed, the Autostart returns to 'Auto/standby' mode, and will automatically start the engine again if a remote start or mains fail condition exists. If the fault has not been corrected, damage to plant may occur when the engine automatically restarts.
F4 (load reset)	This key may be used to manually re-load the generator, after Autostart has automatically taken the generator off load (e.g. because of voltage, frequency or current fault). When **F4** is pressed, Autostart only attempts to put the generator back on load if the measured voltage, frequency and current have returned to within normal limits.
F5 (O/P A)	May be used to activate any Autostart output that has been programmed to a **PC cntrl A** function. The Autostart output can be remotely turned on or off (activating/deactivating plant or control circuitry) by pressing **F5** on the PC keyboard. For full details see Programming literature mi5265.
F6 (O/P B)	Similar to **F5** above, but pressing key activates any output programmed to **PC cntrl B**.
F7 (Mute)	If a generator fault occurs, the software will activate the PC speaker. Press **F7** to mute the speaker.
F8 (Print)	May be used to print out the monitoring screen on the locally connected printer.
F9 (Test)	Initiates an automatic, timed test of the engine or generator. Once initiated, the test will run for the unit's pre-programmed 'remote test' time, even if the communication link is disconnected.

3.5 Manage Profiles

This sub-menu allows the editing and management of Autostart program 'profiles'. A 'profile' is a set of program values and options used to configure each Autostart - settings such timers, trip levels, fault messages, etc. Profiles may be edited, opened from and saved to the PC's hard disk, and uploaded from or downloaded to each Autostart.

The menu is as follows:-

Details in section

```
Manage Profiles:
(F1) Edit current profile          3.5.1
(F2) Open profile from disk        3.5.2
(F3) Save profile to disk          3.5.3
(F4) Up-load profile from Autostart 3.5.4
(F5) Down-load profile to Autostart 3.5.5
(Esc)Return to main menu
```

3.5.1 Manage Profiles **F1**: Edit current profile

Use this selection to edit the program settings of the 'current' profile (with name as displayed at the top of each screen). The PC displays a sub-menu, dividing the Autostart's programmable functions into 6 groups. A 7th option allows the operator to print out a list of the current profile settings:-

```
(F1)  Timers
(F2)  Generator setup
(F3)  DC variables
(F4)  Digital / analogue inputs
(F5)  Outputs
(F6)  Security, Comms & Misc    AS710/20/30
   or Programmable LEDs          AS705
(F7)  Print profile
(Esc) Quit
```

Use the PC function keys **F1** - **F6** to select each of the 6 groups in turn. Each group contains a screen listing of the individual program settings, the exact type and number of which will vary with the features found on each Autostart type. Full details of the program settings, options and adjustment ranges may be found in document mi5265.

The current program profile is edited by using the PC's ↑ and ↓ cursor keys to select each individual function (as indicated by the moving ▶ screen cursor). Values and options may be changed by using the PC **+** or **−** keys (or **PageUp** and **PageDown** keys if preferred); the **Shift** key can be pressed at the same time to give quicker value changes.

Programmable functions that require the entry of text (e.g. fault messages, and PINs) are highlighted by use of green [ ] brackets. These may be edited by typing between the brackets, and by use of the PC ← or → cursor keys.

When the displayed list of settings is correct, press **Esc** once to return to the Edit Current Profile sub-menu, then either select another function group or press **Esc** again to return to the Manage Profiles sub-menu. The revised settings can then be either saved to disk or down-loaded to an Autostart.

3.5.2 Manage Profiles **F2**: Open profile from disk

Use this option to retrieve an Autostart 'profile' from the PC's hard disk. The PC typically displays:-

```
Open profile from disk
Available Files:-
▶    DEFAULTS.730
     GENSET1.730
     GENSET2.730

Use 'PageUp' & 'PageDown', 'enter' to select
```

Only those files that relate to the current unit type are displayed, e.g. if AS730 is the current unit type, .705, .710 and .720 files are not shown. Use the **Page Up** and **Page Down** keys on the PC keyboard to select the file (as indicated by the arrow cursor), then press **Enter** to open that file.

When a new file is opened from disk, the current file settings are discarded. A warning is therefore displayed:-

```
Current file will be disregarded,
'Esc' to quit, 'Enter' to continue.
```

If the current file settings need to be kept, press **Esc**, then save to disk or download the profile. If **Enter** is pressed, the new file is loaded and the PC typically displays:-

```
Profile FILENAME.7xx opened successfully
Last edited on the (date) at (time)
Press 'Enter' to continue
```

When **Enter** is pressed, the program automatically opens the 'Edit current profile' screen, ready for editing the profile if necessary (section 3.5.1 above).

Note that the new, just opened file becomes the 'current' profile, with the filename displayed at the top of the screen.

3.5.3 Manage Profiles F3: Save profile to disk

This option, selected by pressing **F3** from the Manage Profiles menu, may be used to save the 'current' profile to the PC's hard disk. This process gives each profile a unique file name, used to store, organise and recall Autostart program profiles.

When **F3** is pressed, the PC typically displays:-

```
Save program profile:-
     Existing Files:-
     DEFAULTS
     JOB123
     GENXYZ
     New Profile name: ?
```

Type in the new file name, of up to 8 characters (letters or numbers, but not spaces). **Do not type in the .7xx filename extension** - this is added automatically. The name used should ideally be given some significance to the site, customer or plant in question, e.g. 'JOB123', 'GENTYPE3', 'CUSTMA1', etc.

Once the correct file name is displayed, press **Enter**. The PC then displays:-

```
     Saving (newname).7xx
```

Followed by…

```
     File: (newname).7xx saved
     Press 'Esc' to Continue
```

Pressing **Esc** returns the PC to the Manage Profiles menu. The new file is stored in the directory **C:\MURPHY\AS7V1_07**, ready for later recall if necessary. Note that this new file becomes the 'current file', with the new filename displayed at the top of each screen.

3.5.4 Manage Profiles **F4**: Upload profile from Autostart

This function allows a program profile to be retrieved ('uploaded') from a connected Autostart. To do this, the Autostart must be correctly connected and switched on.

When **F4** is pressed, the PC displays 'uploading profile from Autostart'. When the transmission is complete, the PC typically displays:-

```
Murphy AS7xx V1.07    File: upload.7xx
      Profile successfully uploaded
      Press 'Esc' to continue
```

After a profile upload, note that the current filename at the top of the screen changes to `upload.7xx`. When **Esc** is pressed, the program automatically moves to the Display/Edit current profile menu (see section 3.5.1 above), ready for editing of the individual settings.

If the PC fails to correctly upload the Autostart program, it gives an error message, e.g.:-

```
Checking for Autostart
Communication failure
Press 'Esc' to continue
```

Pressing **Esc** then returns the program to the Manage Profiles menu. The operator should then check the connection between PC and Autostart before attempting to upload again.

3.5.5 Manage Profiles F5: Download profile to Autostart

This option is used to send (or 'down-load') the current program profile to a connected Autostart, changing the program settings within that Autostart.

Program down-loads to AS705S, AS710S or AS720S units are virtually instantaneous. Down-loads to AS730S units are also instant, but the unit firmware may take around 15 seconds to recalibrate its AC over-current trip settings: During this time the AS730S cannot respond to fault conditions or start/stop commands. Down-loading is most safely carried out while the engine is stationary, and a warning message is therefore displayed when **F5** is pressed:-

```
AS730 Setup (Current file: newname.ppf)

        Save Profile to AS730
             WARNING
    All generator protection is
  inoperative for 15 seconds during
             update
  Do you wish to continue (y/n)?
```

To continue, press '**Y**'. The PC then displays (in order)…

```
Transmitting
Progress xx%
Transmission Complete
Instrument updating… xx (seconds
remaining)
Press 'Esc' to continue
```

…once the program has downloaded.

3.6 Connect via MODEM to remote Autostart

Use this option (by pressing **F3** from the main menu) to set up a modem connection between the PC and a remote Autostart 710, 720 or 730.

This option is only available (and highlighted with green text) if the software detects that a modem is connected to the assigned PC COM port, and that communication is not already in progress. When **F3** is pressed, the PC displays:-

```
Connect to remote MODEM
Enter phone number or use F1-F8 to speed
dial:_
(F1)  [NAME1           ] [NUMBER1          ]
(F2)  [NAME2           ] [NUMBER2          ]
:
(F8)  [NAME3           ] [NUMBER8          ]
Press "SHIFT" F1-F8 to edit speed-dial entries
```

In the above screen, the phone number of the remote Autostart can be manually typed in: when the correct number is displayed, press **Enter**. Alternatively, one of eight 'speed-dials' may be selected using keys **F1** - **F8**. To set up the speed-dial names and numbers, press **Shift** at the same time as the appropriate function key.

When the software dials out, it displays:-

```
Dialling…
**CONNECTED**
Enter 4 digit PIN number:
```

To gain further access to the Autostart, type in the correct, 4 figure 'log-on' PIN (Personal Identification Number), followed by **Enter**. The factory default log-on PIN is 5678, but this may have been re-programmed in the remote Autostart to prevent access by unauthorised personnel.

Once the correct PIN has been entered, the PC displays 'press any key to continue'. Pressing any key returns the PC to the main menu: the PC and remote Autostart are now in full communication, and other options can be selected as normal.

3.7 Disconnect MODEM link to remote Autostart

Use this option (by pressing **F4** from main menu) to disconnect a remote communications link between PC and Autostart.

When **F4** is pressed, the screen displays:-

```
    Hanging up MODEM
Please wait…
```

After a short delay, the PC displays:-

```
*** Disconnected ***
    Press any key to continue
```

Press any key to return the program to the main menu.

3.8 Monitor Incoming Faults

This option is selected by pressing **F5** from the main menu, but is only available if the software has detected a modem connection. Once this mode is selected, the PC is on standby, ready to receive automatic calls from remote Autostarts (from AS710S, AS720S or AS730S units which have detected a fault and have been previously programmed to dial the 'control centre' modem number in response).

The PC initially displays:-

```
Faults received since data/time: x (number)
 STATUS: Awaiting incoming faults (press Esc to quit)
```

When the PC receives an incoming call, the remote Autostart leaves a fault message, typically:-

```
Fault received from: Site name
Fault: LOW OIL PRESSURE
Fault date/time: dd/mm/yyyy  hh:mm:ss
```

Each Autostart will automatically break off communication once its message has been transmitted, freeing up the PC to receive other calls. If the PC is already engaged in logging a call, or using the modem for other purposes, the remote Autostart will keep trying to dial in until the call is logged.

The PC screen is able to display only one fault message at a time: the message remains on the screen until either another message is received, or the operator presses **Esc**. All fault messages are however appended to a text file, named **faultlog.txt** (in directory 'Murphy/AS7v1_07'). This file may be viewed and edited by use of a word processor or text editor (e.g. Windows Notepad).
Esc may be pressed at any time to return to the main menu, whereupon the software stops logging incoming calls

3.9 Software Configuration

This option on the main menu (**F6**) is used to configure the software with the PC communication port. The sub-menu contains 2 parameters:-

```
Configure software:-
(F1)  COM port
(F2)  Link type (Local / Remote)
(Esc) Return to main menu
```

The COM port and link type, once set, are stored in a separate file (settings.txt) on the PC's hard disk, and are read by the software every time it is started. (There is no need to re-enter these settings every time that the program is run.)

3.9.1 **F1**: COM port

Before any communication, local or remote, can take place between the PC and Autostart, the software must be correctly set for the COM port being used. Note: the current COM port setting is always displayed at the top right of the screen.

The COM (or 'serial') port is a 9 or 25 way D-connector, usually located at the back or side of the PC. If the port used is labelled COM1 or COM2, use that number in the configuration setting above. If the port is not numbered, or simply labelled 'serial', reference should be made to the PC manufacturer's data before selecting the COM port. *(Note: on desktop PCs, COM1 is often used for the mouse, with COM2 as the spare, usable port. On lap-top PCs, COM1 is often the only usable port. COM3 and COM4 are sometimes used for PC internal modems, but are **not** supported by the Autostart PC software).*

When **F1** is pressed, the PC screen displays:-

```
Enter new COM port (1 or 2)?
```

Type in the new COM port number, 1 or 2, then press **Enter**. Note that the new COM port number appears at the top right of the screen.

An incorrect COM port setting will not cause damage to the Autostart or PC, but may result in slow or stalled operation of the software. If the incorrect setting is made, terminate software AS7CK and use Windows Explorer to find and delete the file **C:\Murphy\AS7V1_07\settings.txt.** When software AS7CK is restarted, it will request re-entry of the correct COM port number.

3.9.2 **F2**: link type

This option allows the software to be optimised for local or remote communication links.

'Remote' must be selected before any modem communications can take place. If, however, local communications only are to be used, a 'local' setting will disable the modem checking routines (and remove certain program delays) that are necessary in 'remote' communications mode.

3.10 Quit

With the main menu displayed, press **F10** to terminate software and any communication between PC and Autostart.

With its default installation settings, the PC software may not clear from the screen. The **'Finished - AS7'** Window must be closed as for any other Windows application. Experienced Windows users can set up the DOS program window (in the program 'properties' dialog) to automatically 'close on exit'.

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