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The electrical power generation is provided by the following sources :


- Main and emergency batteries
- Two engine-driven DC starter/generators
- Two AC wild frequency generators
- Two external power units (AC and DC)

In addition, two static inverters (supplied by the DC system) provide constant frequency AC power.

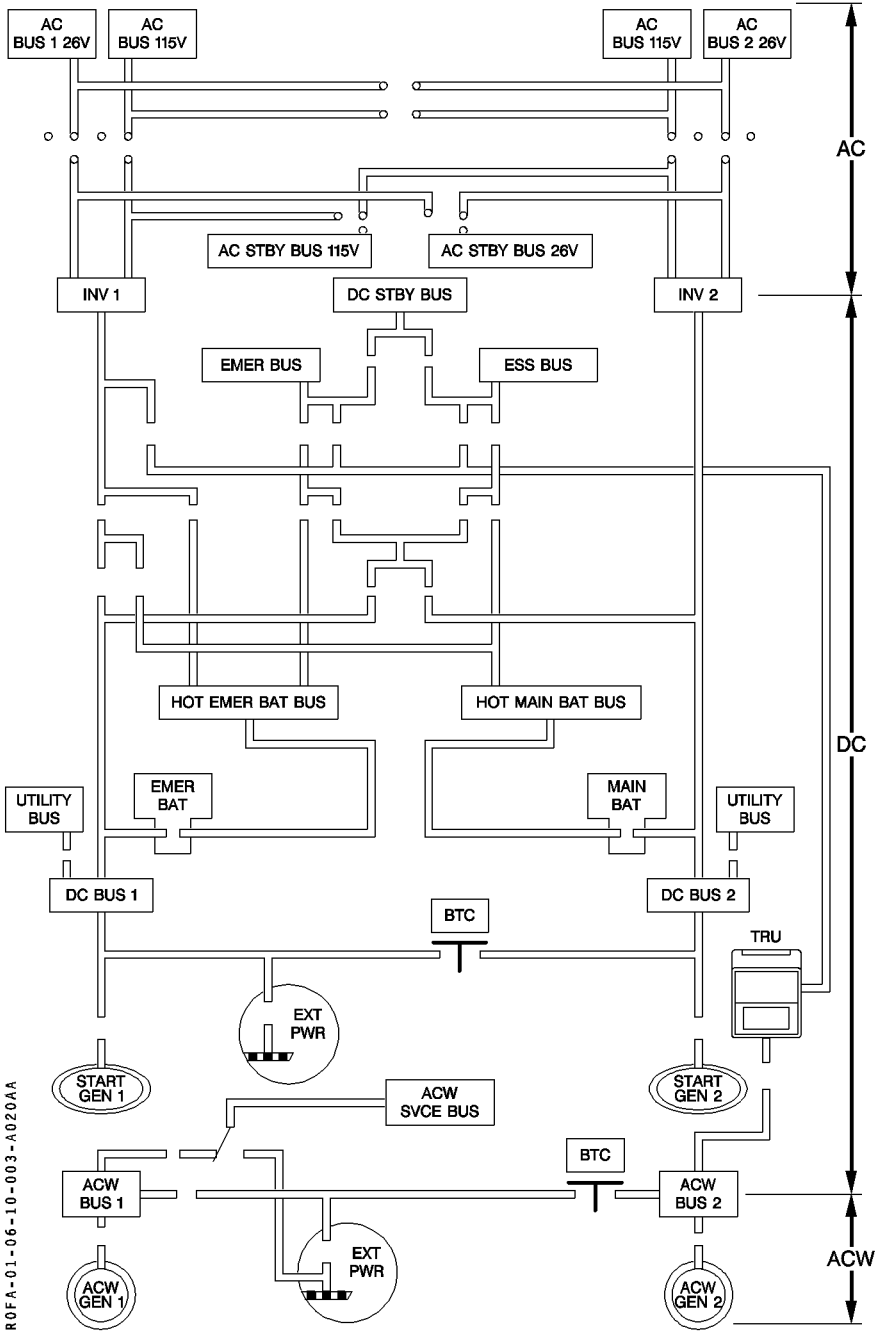
The ACW electrical system can also supply DC electrical system through a transformer rectifier unit (TRU).


The electrical distribution is ensured by busses which feed equipments.

Two separate networks (left and right) run individually and can be connected in case of generation failure thanks to bus tie contactors (BTC).

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20.1 DESCRIPTION

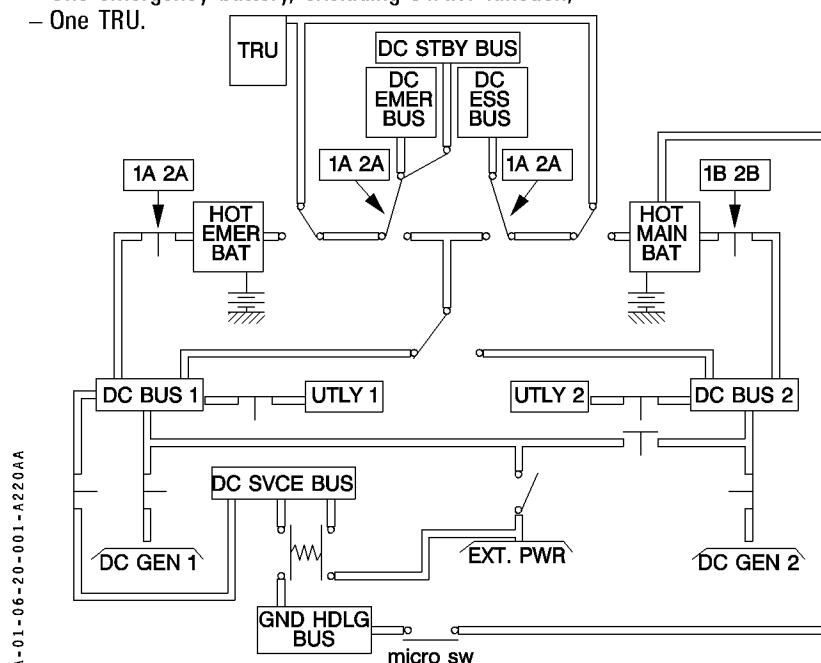
GENERATION

The 28 VDC may be normally provided by :

- Two engines driven starter/generators,
- A ground external power unit.

Three sources may be used for the 28 VDC emergency supply :

- One main battery,
- One emergency battery, excluding START function,
- One TRU.



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NOTE : ☐ means that the associated relay is monitored by MFC .


BATTERIES

A 24 V Ni-Cd battery of 43 Ah (main BAT) is provided for engine starting and for emergency power supply including propeller feathering.

A 24 V Ni-Cd battery of 15 Ah (emer BAT) which, in addition to its secondary role of avoiding power transients on critical equipment during engine starts, ensures power to the emergency network even if the main battery has been completely discharged by repeated start attempts.

Batteries monitoring is performed by MFC which :

- * connects the battery to the associated DC BUS for charging,
- * analyses the charge current and/or associated DC BUS voltage so as to prevent an abnormal battery operating condition or thermal runaway.

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TRU

A TRU is provided in order to conserve the batteries when DC power is under emergency supply conditions (both generators failed). In this configuration, DC electrical emergency system can be supplied by ACW electrical system, through the TRU.

STARTER/GENERATORS

The two DC starter/generators are driven by the engine accessory gear boxes. Each generator is a long life brushes air cooled type and is rated to deliver :

- Nominal output power : 12 KW (400 A)
- Nominal operating voltage : 27 to 31 V (nominal setting 30 V)

Starter mode :

In starting mode, the starter/generator is connected by the START contactor to :

- The aircraft main battery through a BATTERY START CONTACTOR, or
- The external power through an EXTERNAL POWER CONTACTOR, or
- The aircraft main battery and the other operating generator, on ground only (cross start).

In starter mode, the starter/generator cranks the engine to the point of self sustaining (associated engine START ON It illuminated on the ENG START panel). At the end of the start sequence (45 % NH), the start contactor opens (associated engine START ON It extinguished).

Generator mode :

When the engine reaches 61.5% NH, the starter/generator is acting as a generator. Provided associated DC GEN pb is selected and EXT PWR is not used, each generator feeds associated DC BUS through a GENERATOR CONTACTOR (GC).


A GENERATOR CONTROL UNIT (GCU) associated with each generator provides the control for the generator contactor and the start contactor.

The GCU monitors the point of regulation, where the voltage is maintained constant as the load varies, and provides fault detection and protection for :

- over/under voltage
- over/under speed
- differential fault current
- generator overload
- power and fault current limiting
- bus tie lock out
- reverse current
- equalizing load (in case of BTC failed closed).

The BUS TIE CONTACTOR (BTC) allows DC BUS 1 and 2 on line when only one generator is operating (for example during Hotel mode operation) or when the aircraft is powered from EXT PWR.

A single BUS POWER CONTROL UNIT (BPCU) provides the control for BUS TIE CONTACTOR, BATTERY START CONTACTOR, load shedding, EXTERNAL POWER functions, and DC SVCE BUS contactors.

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DISTRIBUTION

The aircraft DC distribution network consists of eleven busses :

- Two main busses : DC BUS 1 and 2
- HOT MAIN BAT BUS and HOT EMER BAT BUS
- DC EMER BUS, DC ESS BUS and DC STBY BUS
- UTLY BUS 1 and 2
- DC SVCE BUS
- GND HDLG BUS

DC BUS 1 and 2

The DC BUS 1 is normally supplied by the LH engine driven generator and the DC BUS 2 by the RH engine driven generator.

In case of generator failure, the associated DC BUS will be automatically supplied by the other generator through the BUS TIE CONTACTOR.

DC BUS 1 normally supplies :

HOT EMER BAT BUS, DC EMER BUS, DC STBY BUS, UTLY BUS 1, INV 1 and DC SVCE BUS.

DC BUS 2 normally supplies :

HOT MAIN BAT BUS, DC ESS BUS, UTLY BUS 2, INV 2.

HOT BAT BUSES

- HOT MAIN BAT BUS and HOT EMER BAT BUS are normally supplied by main DC busses.
- In case of main DC busses failure or thermal runaway of one of the batteries, the associated HOT BAT bus is supplied by its respective battery.

DC ESS BUS/DC EMER BUS/DC STBY BUS

In normal operation, DC EMER BUS and DC STBY BUS are supplied from HOT EMER BAT BUS. DC ESS BUS is supplied from HOT MAIN BAT BUS.

In case of thermal runaway of one of the two batteries, the associated busses are transferred to DC BUS 1 supply.

If DC BUS 1 is not powered, these busses are transferred to DC BUS 2 supply, by the Main Bus Transfer Contactor.


If Both DC generators are lost :

- When TRU is operative, DC EMER BUS, DC ESS BUS can be supplied by the ACW electrical system, through the Transformer Rectifier Unit.
- When TRU is not operative, the DC EMER BUS, DC ESS BUS and DC STBY BUS are supplied by their respective HOT BAT BUS.

Note : During engine starts, or when cranking, DC STBY BUS is supplied by HOT EMER BAT BUS. INV 1 remains supplied by HOT MAIN BAT BUS.

UTLY BUS 1 and 2

The UTLY BUS 1 and 2 supply non essential loads. They are supplied by the associated main DC BUS through UTLY BUS CONTACTORS (UBC(s)). The contactors are controlled by the BPCU so that the UTLY BUS(ES) can be automatically deenergized if the supply source becomes overloaded.

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DC SVCE BUS

The DC SVCE BUS supplies power in flight, and on ground during airplane servicing operations.

The DC SVCE BUS can be supplied by :

- DC BUS 1. The master sw is the DC SVCE/UTLY BUS pb. When selected on, the cabin attendant controls the DC SVCE BUS supply from a sw located on the cabin attendant control panel.
- EXT PWR. Only the cabin attendant pb has control. The supply of the BUS may be performed with batteries switched OFF.

GND HDLG BUS

The GND HDLG BUS supplies the DC loads required for airplane servicing on the ground even with BAT sw selected OFF. Since these loads are not required during flight, the GND HDLG BUS is deenergized in flight. The GND HDLG BUS can be supplied :

- When EXT PWR is available, from DC SVCE BUS.
- When EXT PWR is not available, from HOT MAIN BAT BUS provided :
 - Cargo door operating panel door is open (micro switch), or
 - Refueling panel is open (micro switch), or
 - Entry door is open (micro switch).

TRANSFER (see schematics p. 15 to p. 26)


With all switches in normal position, the DC power transfer is achieved by automatic opening and/or closure of electrical contactors according to the particular electrical conditions.

- On ground
 - When EXT PWR is connected (p. 15/16)

Note : The electrical power transfer is achieved in the same way as in flight as long as EXT POWER is not connected.

- In flight
 - Both engine driven generator operating (p. 19/20)
 - * The engine driven generator 1 supplies the DC BUS 1,
 - * The engine driven generator 2 supplies the DC BUS 2,
 - * The BTC is open.
 - If one engine driven generator fails (p. 21/22)
 - * The BTC closes (BTC green flow bar illuminates),
 - * The entire electrical network is supplied by the remaining engine driven generator.
 - If both engine driven generators fail (p. 23/24)
 - * DC ESS BUS, DC STBY BUS are supplied from the main battery, or from the TRU, if selected ON.
 - * DC EMER BUS is supplied from the emergency battery or from the TRU, if selected ON.
 - If both engine driven generators fail and TRU is inoperative (p. 25/26)
 - * When DC STBY BUS reaches undervoltage (amber UNDV light comes ON), this bus may be recovered by selecting OVERRIDE pb.

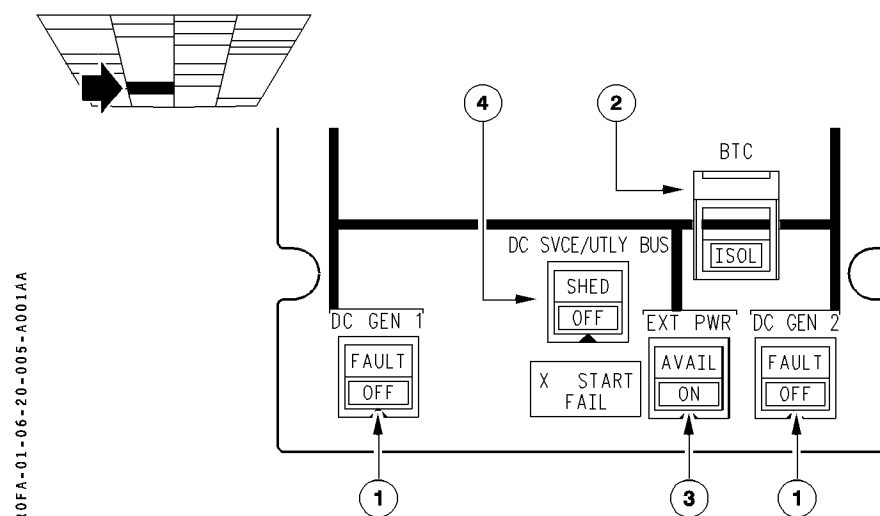
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20.2 CONTROLS

GENERATION



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① DC GEN pb


Controls the energization of associated generator and the resetting of the protection system after failure.

ON (pb pressed in) Associated generator is energized and associated generator contactor closes if the network electrical parameters are normal.

OFF (pb released) associated generator is deenergized and associated generator contactor is opened. The OFF light illuminates white.

FAULT illuminates amber and the CCAS is activated in event of :

- A protection trip initiated by the associated GCU. If it is caused by a generator underspeed, reset will be automatic. For the other cases, a manual reset has to be performed.
- An opening of a generator contactor except if pb is selected OFF. In both cases, the BUS TIE CONTACTOR closes and affected DC BUS is automatically supplied from the remaining generator.

	ELECTRICAL SYSTEM DC POWER	1.06.20		
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② BTC pb

This guarded pb controls the DC BUS TIE CONTACTOR (BTC) which, when closed, connects both main DC BUSSES.

NORM (released) The BPCU automatically controls the BTC

- In normal conditions with both generators operating, the BTC is opened allowing isolated operation of both generator circuits.
- In case of external power operation, Hotel mode or single generation, the BTC is automatically closed, the flow bar is illuminated.

ISOL (pressed in) The BTC is opened. ISOL light illuminates white.

③ EXT PWR pb

AVAIL Illuminates green when conditions of DC external power connection are met.

ON Allows to connect DC external power.
Refer to EXTERNAL PWR section for more informations.


④ DC SVCE/UTLY BUS pb

Controls connection/disconnection of DC SVCE BUS and both UTLY BUSSES to associated main DC BUSSES.

NORM (pb pressed in) DC SVCE BUS and both UTLY BUS are available unless a load shed signal is provided by the BPCU.

OFF (pb released) DC SVCE BUS and both UTLY BUSSES are disconnected from associated main DC BUS. The OFF It illuminates white.

SHED Illuminates amber and the CCAS is activated when a load shed condition controlled by the BPCU is present and at least one UTLY BUS is disconnected from associated main DC BUS.

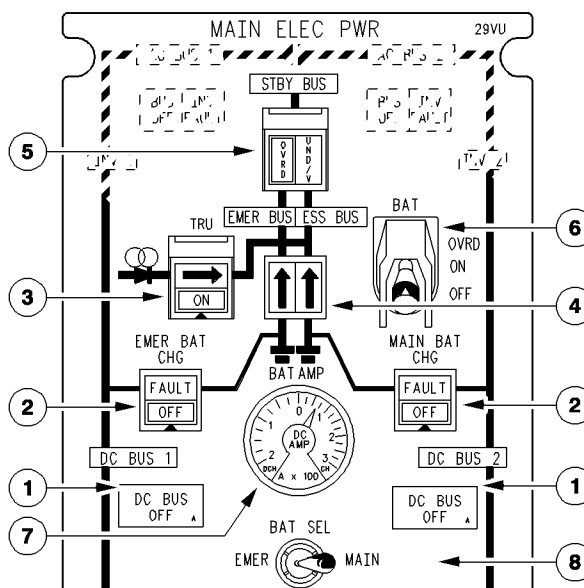
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DISTRIBUTION



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① DC BUS OFF lights

Illuminates amber when associated main DC BUS is not supplied.
If one DC BUS is OFF, the CCAS will be activated (MC + SC + ELEC on CAP)

② BAT CHG pbs

Controls the operation of the associated BATTERY CHARGE CONTACTOR.

ON (pb pressed in) The contactor is controlled by the MFC.


Contactor is closed in normal operation, it opens in case of :

- Thermal runaway of battery
- Undervoltage of DC MAIN BUS (< 25 V)
- Start sequence initiated (in this case, both BCC are opened, and closed when start rotary selector leaves START or CRANK position).
- An OVRD signal on BAT switch

OFF (pb released). The charge contactor is opened. The OFF light illuminates white.


FAULT Illuminates amber and the CCAS is activated in event of :

- An overheat detected by the MFC. In this case, the charge contactor automatically opens.
- A failure of the charge contactor.

	ELECTRICAL SYSTEM DC POWER	1.06.20		
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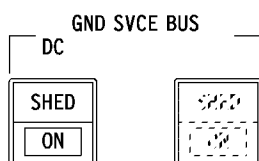
- ③ TRU pb
NORM (pb released)
 – One engine driven generator operating :
 • DC EMER and DC STBY BUS are supplied from HOT EMER BAT BUS.
 • INV 1 is supplied from DC BUS 1
 • DC ESS is supplied from HOT MAIN BAT BUS.
 – Both engine driven generators failed :
 • DC EMER is supplied from HOT EMER BAT BUS
 • INV 1, DC STBY BUS and DC ESS BUS are supplied from HOT MAIN BAT BUS
ON (pb pressed in) The TRU is connected to ACW BUS 2. ON It illuminates white. Arrow → illuminates amber when supply of DC EMER BUS, DC STBY BUS, INV 1 and DC ESS BUS from TRU is effective.
- ④ Emergency supply ind
 Right arrow illuminates amber when the DC ESS BUS is supplied from the MAIN BAT.
 Left arrow illuminates amber when the DC EMER BUS is supplied from the EMER BAT.
- ⑤ OVRD pb
 When on batteries supply, this guarded pb allows to transfer the DC STBY BUS and the INV 1 from HOT MAIN BAT BUS to HOT EMER BAT BUS.
NORM (pb released) The DC STBY BUS and INV 1 are supplied from the same source as DC ESS BUS.
OVRD (pb pressed in) The DC STBY BUS and INV 1 are supplied from the same source as DC EMER BUS. OVRD It illuminates white (see p 21).
UNDV The It illuminates amber, to indicate that DC STBY BUS voltage is lower than 19.5 v. OVRD may be used as necessary
- ⑥ BAT toggle sw
 The BAT three positions toggle sw is used to provide DC electrical power :
 – from the emer battery to the EMER BUS,
 – from the main battery to the ESS BUS, and DC STBY BUS, and through the INV 1, to the AC STBY BUS.
OFF ESS BUS, DC STBY BUS and INV 1 are isolated from the HOT MAIN BAT BUS.
 DC EMER BUS is isolated from the HOT EMER BAT BUS.
ON – With engine driven generators OFF and EXT PWR off, ESS BUS, STBY BUS and INV 1 are supplied from the HOT MAIN BAT BUS. EMER BUS is supplied from the HOT EMER BAT BUS.
 – With generation other than battery available, ESS BUS is supplied by the HOT MAIN BAT BUS ; EMER BUS and STBY BUS are supplied by the HOT EMER BAT BUS.
OVRD Allow to be sure busses are supplied by their respective battery by overriding all protections. This position is protected by a toggle guard.
- ⑦ DC AMP ind.
 Indicates the charge (CH)/discharge (DCH) current of the selected battery.
- ⑧ BAT AMP reading selector
 Enables to select the battery checked by the ammeter (7).

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CABIN ATTENDANT PANEL

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DC SVCE BUS pb

Controls the supply of the DC SVCE BUS.

Note : – Without GPU (DC BUS 1 supplying)

DC SVCE BUS will be supplied if both the cockpit DC SVCE and UTLY BUS and the cabin attendant panel DC SVCE BUS are selected. As soon as one of the two pb is selected OFF, the bus is isolated.

– With GPU (direct supplying).


DC SVCE BUS is directly supplied provided Cabin attendant panel pb is ON. If the DC SVCE BUS cabin attendant panel pb is on SHED position, cargo door opening, internal lighting and refuelling panel are not supplied.

ON (pb pressed in) The light illuminates blue whenever a power source is available on the aircraft.

OFF (pb released) The DC SVCE BUS is disconnected from the available power source. The ON light extinguishes.

SHED Illuminates amber when :


– DC source is available and the pb is released, or the pb is pressed in and an overload shed occurs.

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	DC POWER			DEC 96

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20.3 ELECTRICAL SUPPLY/MFC LOGIC/SYSTEM MONITORING
ELECTRICAL SUPPLY

EQUIPMENT	DC BUS SUPPLY (C / B)	AC BUS SUPPLY (C / B)
Generator Control Unit 1	DC EMER BUS (on lateral panel GCU DC GEN 1)	- Nil -
Generator Control Unit 2	DC ESS BUS (on lateral panel GCU DC GEN 2)	- Nil -
Bus Power Control Unit	DC EMER BUS (on lateral panel BPCU DC)	- Nil -
Main Battery CHG CTL	DC ESS BUS (on lateral panel CHG CTL and CAUTION)	- Nil -
Emer Battery CHG CTL	DC EMER BUS (on lateral panel CHG CTL and CAUTION)	- Nil -
Ess BUS and INV1 on main Bat ind (arrow)	DC ESS BUS (on lateral panel IND)	- Nil -
Emer Bus on Bat ind (arrow)	HOT EMER BAT BUS (on lateral panel or EMER BAT BUS IND)	- Nil -
Emer Bat Voltage ind	HOT EMER BAT BUS (on lateral panel VIND)	- Nil -
DC BUS 1 OFF caution light	DC EMER BUS (on lateral panel DC BUS 1 OFF CAUT. LT)	- Nil -
DC BUS 2 OFF caution light	DC EMER BUS (on lateral panel DC BUS 2OFF CAUT LT)	- Nil -
Main Bat Voltage ind	HOT MAIN BAT BUS (on lateral panel VIND)	- Nil -
DC STBY BUS undervoltage and OVRD ind	DC EMER BUS (on lateral panel UNDV and OVRD IND)	- Nil -
DC STBY BUS control	DC EMER BUS (on lateral panel OVRD CTL)	- Nil -
Ground Handling bus on Bat XF relay	HOT MAIN BAT BUS (on lateral panel RLY)	- Nil -

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MFC LOGIC

See chapter 1.01.

SYSTEM MONITORING

The following conditions are monitored by visual and aural alerts :

- One DC generation channel inoperative.
 - See DC GEN FAULT procedure in chapter 2.05.04
- DC BUS 1 not supplied
 - See DC BUS 1 OFF procedure in chapter 2.05.04
- DC BUS 2 not supplied
 - See DC BUS 2 OFF procedure in chapter 2.05.04
- Incipient battery thermal runaway or change contactor failure.
 - See CHG FAULT procedure in chapter 2.05.04
- DC EMER BUS no longer supplied.
 - See DC EMER BUS OFF procedure in chapter 2.05.04
- Battery (ies) discharge in flight (but DC main sources available).
 - SEE BATTERY (IES) DISCHARGE IN FLIGHT in chapter 2.05.04.
- One UTLY BUS automatically shed after a source overload
 - See SVCE and UTLY BUS SHED procedure in chapter 2.05.04

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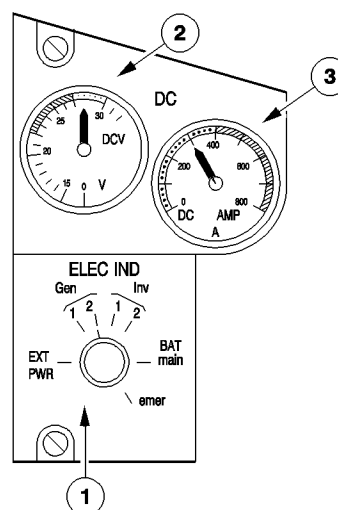
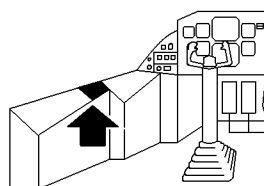
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20.4 LATERAL MAINTENANCE PANEL

On LH maintenance panel, a rotary selector is provided, with several indicators. These devices are to be used for maintenance purpose only. Maintenance panel is covered with a transparent cover, to avoid in flight operation.

CURRENT CHECK

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① Rotary Selector

Allows to connect selected pick-up points of the electrical network to the indicators.

"GEN" position selects DC generator on DC indicators.

② DC voltage indicator

Indicates the voltage at pick up point selected by the rotary selector.


Normal reading is :

- For battery without load : 25 to 28 volts.
- For battery under load : 23 to 28 volts.

③ DC Current indicator

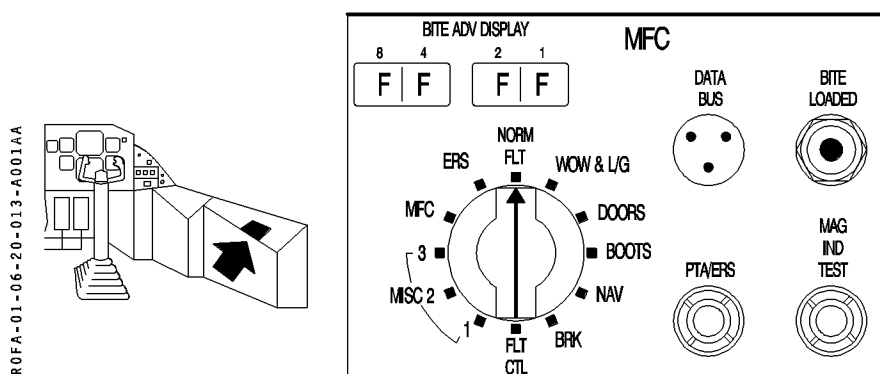
Indicates the current generated by selected sources.

Normal reading is for each generator : less than 300 A.

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DC UTLY/SVCE/STBY CONTACTORS MALFUNCTION INDICATION AND DC FEEDERS OVHT DETECTORS



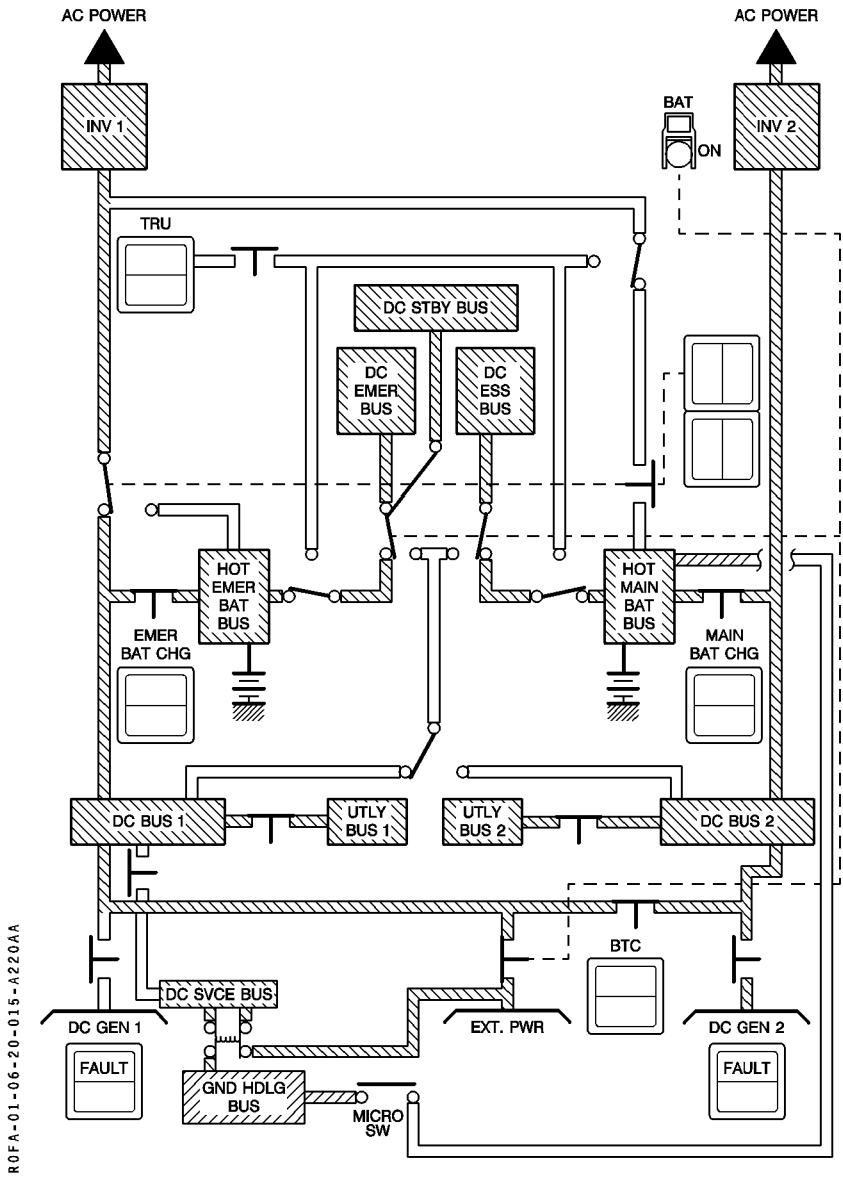
ELECTRICAL MALFUNCTIONS ARE INDICATED BY MFC AS FOLLOWS :


- ROTARY SELECTOR ON MISC 1 POSITION :
 - 3rd press on PTA/ERS pb and **OOFF** displayed :
DC FEEDER 1 affected by discontinuity or overheat.
 - 4th press on PTA/ERS pb and **OFOO** displayed :
DC FEEDER 2 affected by discontinuity or overheat.
 - 5th press on PTA/ERS pb and **OFOF** displayed :
DC SVCE/UTLY contactor failure
- ROTARY SELECTOR ON MISC 2 POSITION :
 - 1st press on PTA/ERS pb and **OOOF** displayed :
DC STBY contactor failure.

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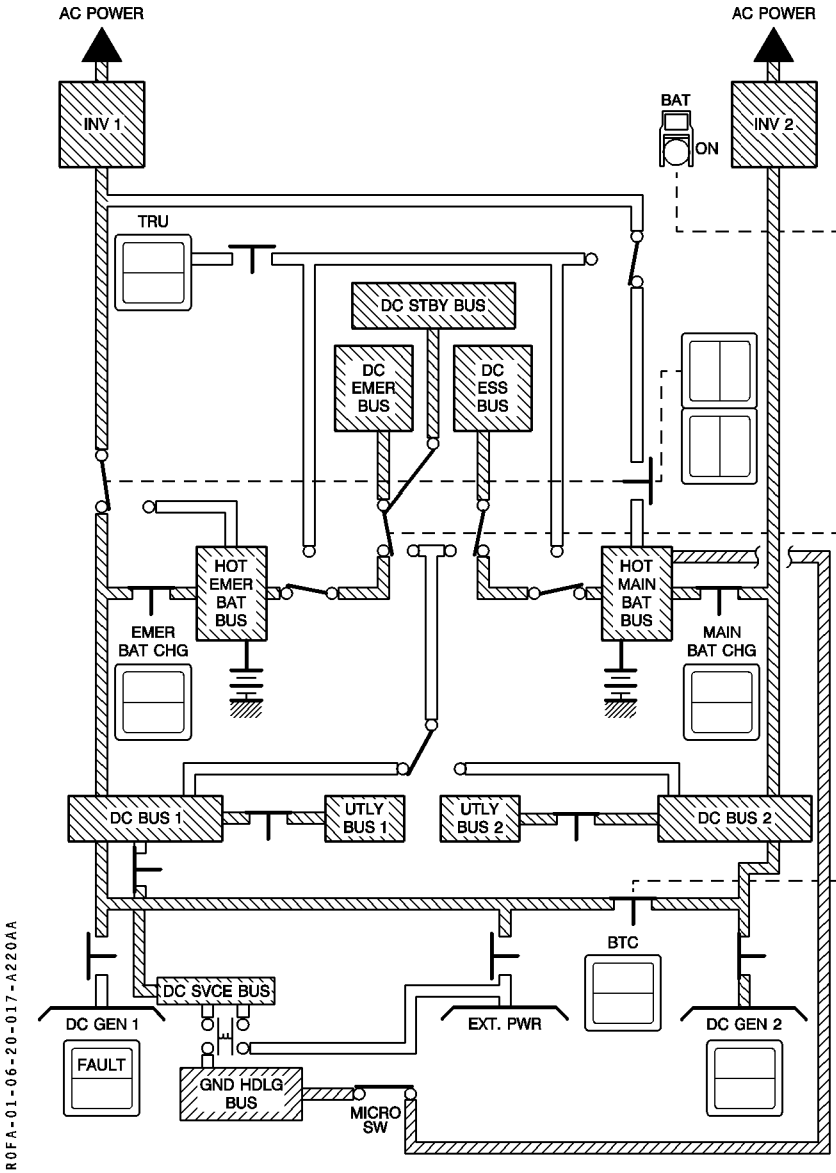
20.5 SCHEMATICS


EXTERNAL POWER MODE



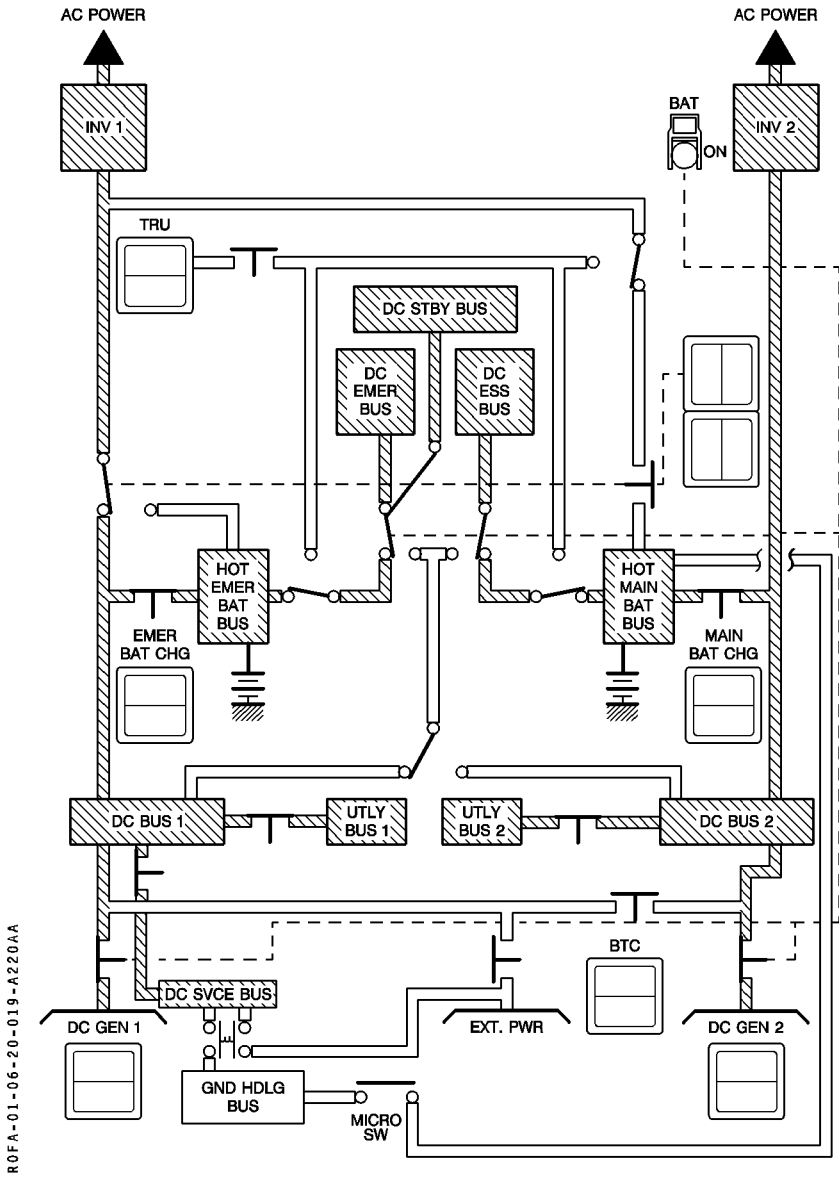
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HOTEL MODE



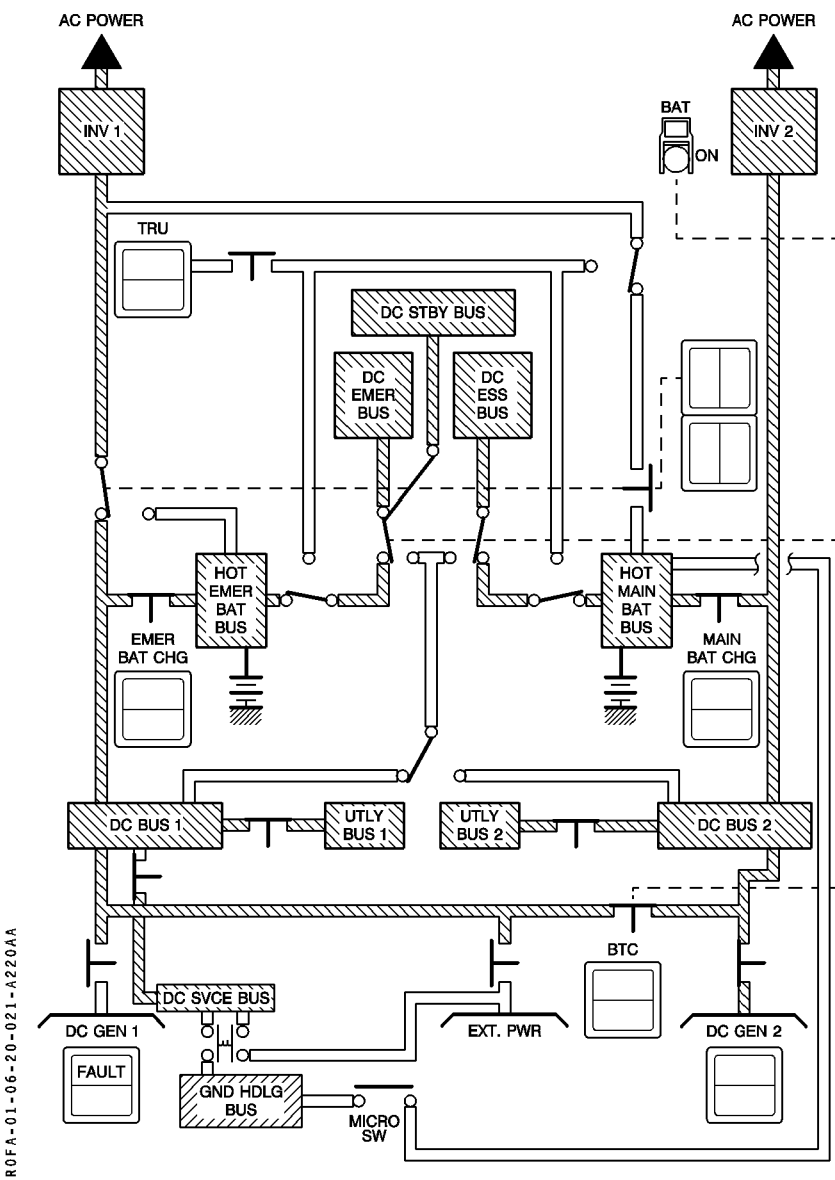
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NORMAL SUPPLY



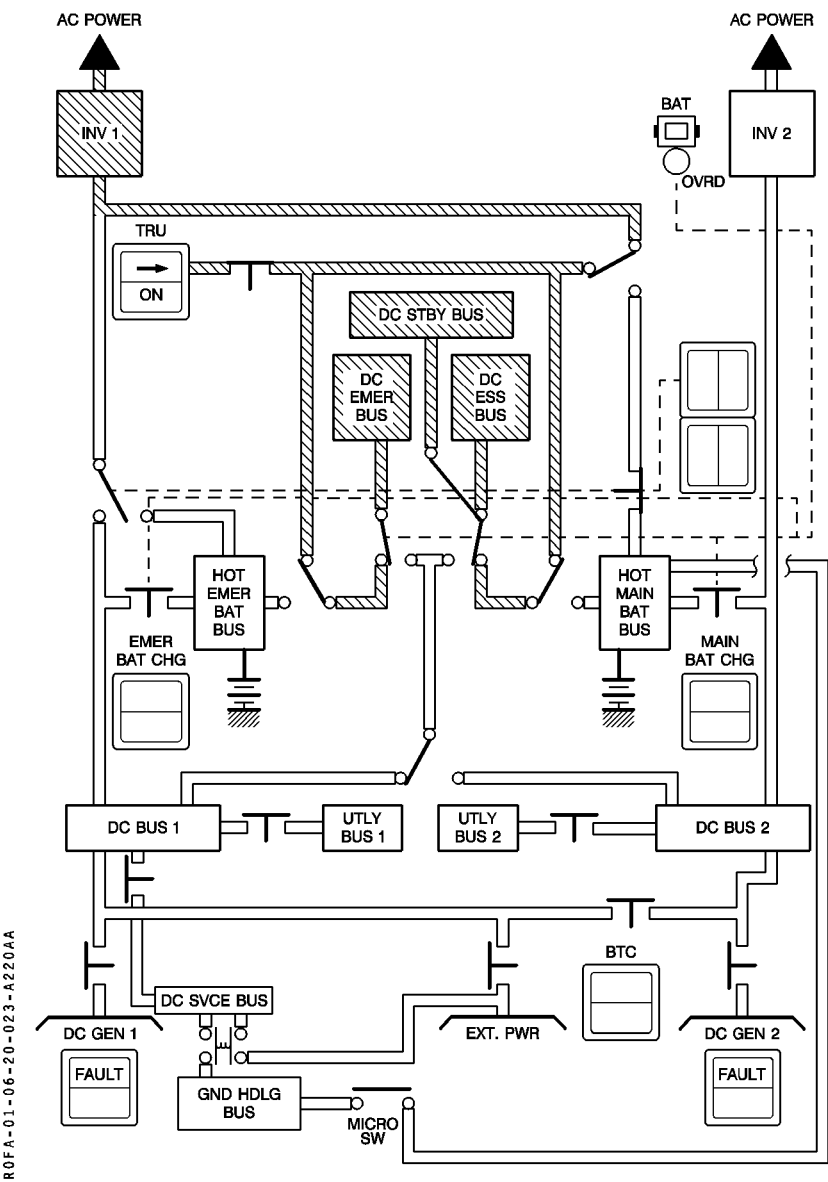
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GEN 1 FAILED



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EMERGENCY SUPPLY



	ELECTRICAL SYSTEM AC CONSTANT FREQUENCY	1.06.30		
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				SEP 05

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30.1 DESCRIPTION

GENERATION

The source of constant frequency (400 Hz) AC power consists of two static inverters (INV).

The inverters are rack mounted and cooled by forced air with provisions for natural convection cooling.

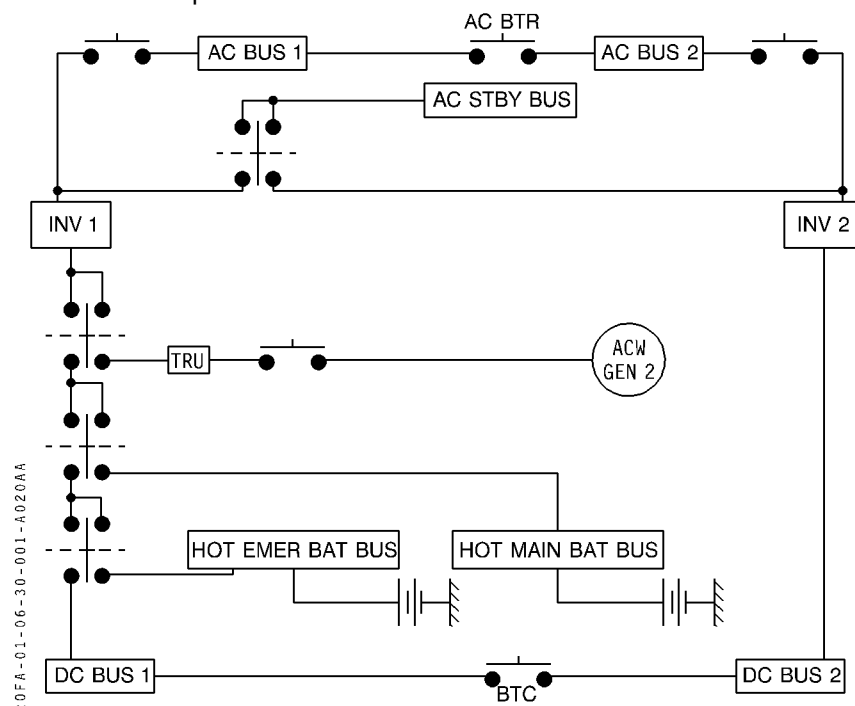
The static inverter design characteristics are as follows :

- Power 500 VA
- Output voltage $115\text{ V} \pm 4\text{V}$ and $26\text{ V} \pm 1\text{V}$
- Frequency $400\text{ Hz} \pm 5\text{ Hz}$
- Type single phase


The two inverters are powered respectively from DC BUS 1 and DC BUS 2. The input voltage range is between 18 VDC and 31 VDC for satisfactory operation.

R In event of one DC BUS loss, corresponding inverter is not supplied, but corresponding AC BUS is supplied by AC BTR (BTC pb).

In event of both DC BUS power loss, INV1 is automatically supplied by HOT MAIN BAT BUS, or by HOT EMER BAT BUS in OVRD configuration or by TRU when selected ON. The maximum power available on each 26 VAC BUS is 250VA.



Note : Two AC electrical networks are supplied by the inverters : 115 VAC and 26 VAC. Only one is shown on the schematics.

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	AC CONSTANT FREQUENCY			DEC 96

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DISTRIBUTION (115 and 26 V)

INV 1 normally supplies :

- AC BUS 1
- AC STBY BUS 1

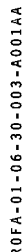
INV 2 normally supplies :

- AC BUS 2

In event of inverter failure or input power loss the associated AC BUS is isolated from affected inverter and, provided the BTC pb is not in ISOL position. The AC BUS 1 and 2 are automatically tied together.

In event of INV 1 failure or input power loss, AC STBY BUS is automatically supplied from INV 2.

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— Illuminates amber and the CCAS is activated when an under/over voltage is detected at the output of the associated inverter.

② BUS OFF light

③ OVRD pb


NORM (pb released) The INV 1 and AC STBY BUS are supplied from the same source as DC ESS BUS.

UNDV The It illuminates amber to indicate that the DC STBY BUS voltage is lower than 19.5 V. INV 1 requires 18 V for normal operation. OVRD may be used as necessary.

This guarded pb controls the AC BUS TIE relay (AC BTR) which, when closed, connects both main AC BUSSES.

* In normal conditions, with both inverters running, the AC BTR is open allowing isolated operation of both inverter circuits.

ISOL (pb pressed in). The AC BTR is open, ISOL light illuminates white.


	ELECTRICAL SYSTEM	1.06.30		
		P 4	001	
	AC CONSTANT FREQUENCY			DEC 96

AA

30.3 ELECTRICAL SUPPLY/MFC LOGIC/SYSTEM MONITORING

ELECTRICAL SUPPLY

EQUIPMENT	DC BUS SUPPLY (C/B)	AC BUS SUPPLY (C/B)
INV 1 + AC BUS 1 AC voltage and frequency ind.	– Nil –	115 VAC EMER BUS (on lateral panel FREQ IND.)
AC BUS 1 power supply 115 VAC	– Nil –	115 VAC OUTPUT INV 1 (on lateral panel 115 VAC)
AC BUS 1 power supply 26 VAC	– Nil –	26 VAC OUTPUT INV 1 (on lateral panel 26 VAC)
AC BUS 1 control and INV 1 caution	DC EMER BUS (on lateral panel INV CAUTION and BUS SPLY RLY)	
AC BUS 1 caution relay	– Nil –	115 VAC BUS 1 (on lateral panel RLY)
AC BUS 1 caution light	DC EMER BUS (on lateral panel LT)	– Nil –
INV 2 + AC BUS 2 ACV and frequency ind.	– Nil –	115 VAC BUS 2 (on lateral panel FREQ IND)
AC BUS 2 power supply 115 VAC	– Nil –	115 VAC OUTPUT INV 2 (on lateral panel 115 VAC)
AC BUS 2 power supply 26 VAC	– Nil –	26 VAC OUTPUT INV 2 (on lateral panel 26 VAC)
AC BUS 2 control and INV 2 caution	DC ESS BUS (on lateral panel BUS CTL and INV CAUTION)	– Nil –
AC BUS 2 caution relay	– Nil –	115 VAC BUS 2 (on lateral panel RLY)
AC BUS 2 caution light	DC EMER BUS (on lateral panel LT)	– Nil –
AC BUS 1 and 2 tie line 115 VAC	– Nil –	115 VAC BUS 1 (on lateral panel 115 VAC)
AC BUS 1 and 2 tie line 26 VAC	– Nil –	26 VAC BUS 1 (on lateral panel 26 VAC)
AC STBY BUS power supply 115 VAC	– Nil –	OUTPUT INV 1 or 2 (on lateral panel 115 VAC)
AC STBY BUS power supply 26 VAC	– Nil –	OUTPUT INV 1 or 2 (on lateral panel 26 VAC)
AC STBY BUS transfer relay	DC EMER BUS (on lateral panel AC EMER and STBY BUS XFR RLY)	– Nil –

	ELECTRICAL SYSTEM	1.06.30		
		P 5	001	
	AC CONSTANT FREQUENCY			DEC 96

AA


MFC LOGIC

See chapter 1.01.

SYSTEM MONITORING

The following conditions are monitored by visual and aural alerts :

- Under/over voltage at INV output
 - See INV FAULT procedure in chapter 2.05.04.
- AC BUS 1 not supplied (short circuit protection)
 - See AC BUS 1 OFF procedure in chapter 2.05.04.
- AC BUS 2 not supplied (short circuit protection)
 - See AC BUS 2 OFF procedure in chapter 2.05.04.

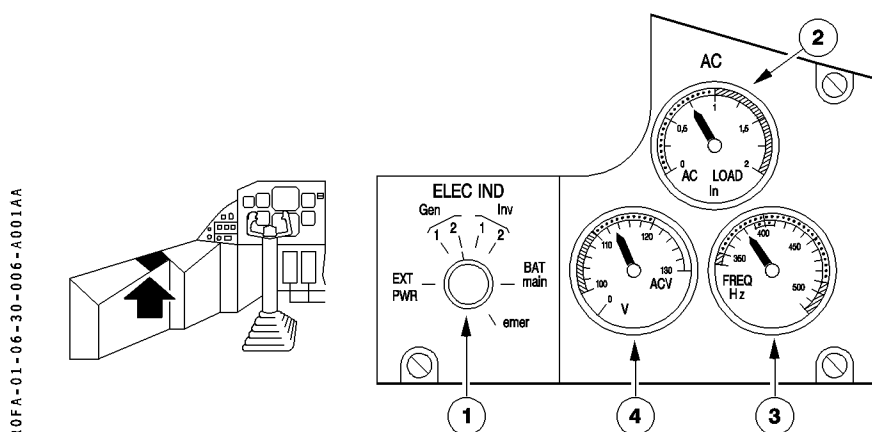
	ELECTRICAL SYSTEM		1.06.30		
	AC CONSTANT FREQUENCY		P 6	001	
					DEC 96

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30.4 LATERAL MAINTENANCE PANEL

On LH maintenance panel, a rotary selector is provided, with several indicators. These devices are to be used for maintenance purpose only. Maintenance panel is covered with a transparent cover, to avoid in flight operation.

CURRENT CHECK



① Rotary Selector

Allows to connect selected pick-up points of the electrical network to the indicators.

"INV" position selects AC current on AC indicators.

② AC load indicator

Indicates in hundred percent the load of selected AC source.

Normal reading : below 0.5.

③ Frequency indicator


Indicates in Hz frequency of selected AC source.

Normal reading : 400 Hz \pm 5 Hz.

④ AC voltage indicator

Indicates voltage on selected AC source.

Normal reading : 115 V \pm 4 V.

	ELECTRICAL SYSTEM		1.06.40		
			P 1	050	
	AC WILD FREQUENCY				DEC 96

AA

40.1 DESCRIPTION

GENERATION

The ACW generation system consists of two "propeller" driven 3 phases generators. Each generator is a brushless, air cooled type and is rated to deliver 20 KVA for continuous operation.

Nominal set voltage 115 V/200 V.

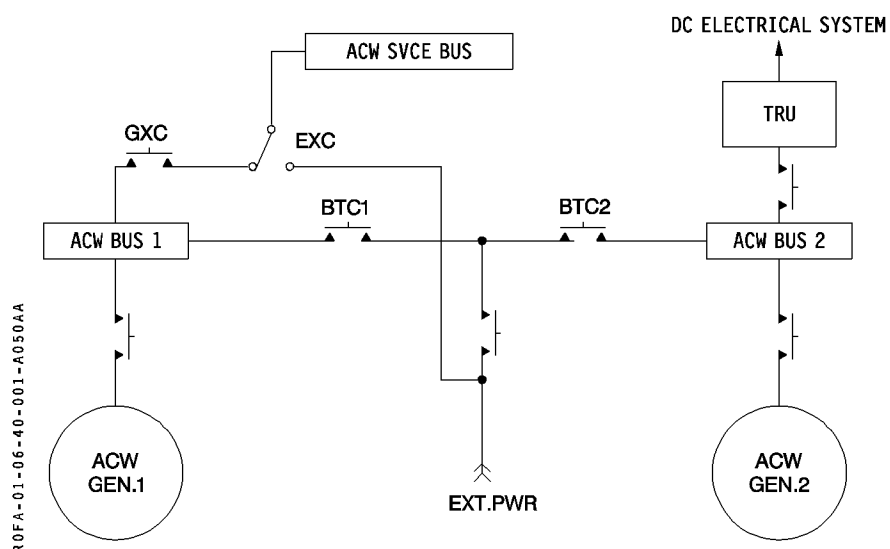
Normal operating frequency range : 341 to 488 Hz (70 to 100% NP)


Each generator is controlled by a Generator Control Unit (GCU) which provides the following control and protection functions :

- overvoltage
- power and fault current limiting
- bus tie lock out
- undervoltage
- differential protection
- under frequency
- open phase
- overfrequency
- voltage regulation.

The BPCU performs the functions required for control and protection of the EXT PWR, the BUS TIES (or BTC(S)) and SVCE BUS.

The TRU allows the ACW generation system to partially energize the DC electrical system from ACW BUS 2.



	ELECTRICAL SYSTEM	1.06.40		
		P 2	001	
	AC WILD FREQUENCY			DEC 96

AA

DISTRIBUTION

The aircraft ACW distribution network consists of three busses :

- Two main busses ACW BUS 1 and 2.
- ACW SVCE BUS.

ACW BUS 1 and 2

The ACW BUS 1 is normally supplied by the generator driven by the LH generator and the ACW BUS 2 by the RH generator.

Note : * In case of generator failure, the associated ACW BUS will be automatically supplied by the other generator through the BUS TIE CONTACTORS (1 and 2).


- * As soon as EXT PWR is connected, selected ON and checked "acceptable" in voltage, frequency, phase, and current by the BPCU, it has priority over the engine driven generators.

ACW SVCE BUS

The ACW SVCE BUS supplies power inflight, and on ground during airplane servicing operations. The ACW SVCE BUS can be supplied from EXT PWR or ACW BUS 1. A sw located on the cabin attendant panel controls the power to ACW SVCE BUS.

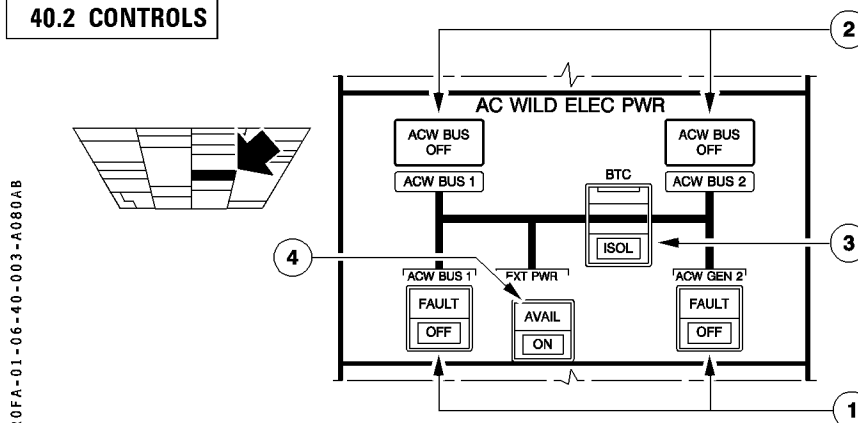
- * When the ACW BUS 1 is ON, power being supplied by the generator or EXT PWR through BTC 1, the ACW SVCE BUS is automatically fed from ACW BUS 1 through contactor GXC.
- * When the aircraft is operating from EXT PWR with ACW BUS 1 OFF, the ACW SVCE BUS is fed from EXT PWR through contactor EXC.

Note : The ACW SVCE BUS is automatically shed when one generator is off line.

	ELECTRICAL SYSTEM		1.06.40		
			P 3	080	
	AC WILD FREQUENCY				DEC 96

AA

40.2 CONTROLS



① ACW GEN pb

Controls the energization of associated generator and the resetting of the protection system after failure.

ON (pb pressed in) Associated generator is energized and associated generator contactor closes if the network electrical parameters are normal.

OFF (pb released) Associated generator is deenergized and associated generator contactor is open. OFF light illuminates white.


FAULT Illuminates amber and the CCAS is activated in event of :

- A protection trip initiated by the associated GCU. If it is caused by a NP overspeed for less than 3 seconds or a generator underspeed, reset will be automatic. For the other cases, a manual reset has to be performed.
- An opening of a generator contactor except if pb is selected OFF.

In both cases, the BTC is closed and affected ACW BUS is automatically supplied from the remaining generator. The light extinguishes and the fault circuit is reset when the pb is cycled to the out position.

② ACW BUS OFF light

Illuminates amber and the CCAS is activated when associated ACW BUS is not supplied.

	ELECTRICAL SYSTEM		1.06.40		
	AC WILD FREQUENCY		P 4	001	
					DEC 96

AA

③ BTC PB

This guarded PB controls the ACW BUS TIE CONTACTORS (BTC 1 and 2) which, when closed, connects both main ACW BUSSES in parallel.

NORM (PB released) BPCU Automatically controls BTC 1 and 2 :

- In normal conditions, with both generators running, BTC 1 and 2 are open, allowing individual operation of both generator circuits.
- In case of external power operation, or single generator failure, BTC 1 and 2 are automatically closed. The flow bar is illuminated.

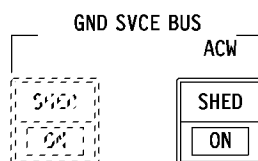
ISOL (pb pressed in) BTC 1 and 2 are open, ISOL light illuminates white.

④ EXT PWR PB

Refer to EXTERNAL POWER section.

CABIN ATTENDANT PANEL

R0FA-01-06-40-004-A001AA




ACW SVCE BUS pb

Connects the ACW SVCE BUS to the EXT PWR source or to the ACW BUS 1 when it is energized.

ON (pb pressed in) Whenever ACW power or external AC power of acceptable quality is available, the light illuminates blue.

OFF (pb released) The SVCE BUS is disconnected from the available power source. The ON light extinguishes.

SHED Illuminates amber when :
 – the ACW source is available and the PB is released, or
 – the PB is pressed in and an overload shed occurs.

	ELECTRICAL SYSTEM	1.06.40		
		P 5	001	
	AC WILD FREQUENCY			DEC 96

AA

40.3 ELECTRICAL SUPPLY/SYSTEM MONITORING


ELECTRICAL SUPPLY

EQUIPMENT	DC BUS SUPPLY (C/B)	AC BUS SUPPLY (C/B)
GCU of ACW GEN 1	DC ESS BUS (on lateral panel GCU ACW GEN 1)	– Nil –
GCU of ACW GEN 2	DC ESS BUS (on lateral panel GCU ACW GEN 2)	– Nil –
ACW BPCU	DC ESS BUS (on lateral panel BPCU ACW)	– Nil –
ACW BUS 1 caution relay	– Nil –	ACW BUS 1 (on lateral panel RLY)
ACW BUS 1 caution light	DC EMER BUS (on lateral panel LT)	– Nil –
ACW BUS 2 caution relay	– Nil –	ACW BUS 2 (on lateral panel RLY)
ACW BUS 2 caution light	DC EMER BUS (on lateral panel LT)	– Nil –
ACW SVCE BUS shed relay	– Nil –	ACW SVCE BUS (on lateral panel ACW SVCE BUS SHED CAUTION RLY)

SYSTEM MONITORING

The following conditions are monitored by visual and aural alerts :

- One ACW generator channel inoperative
 - See ACW GEN FAULT procedure in chapter 2.05.04.
- ACW BUS 1 not supplied (short circuit protection)
 - See ACW BUS 1 OFF procedure in chapter 2.05.04.
- ACW BUS 2 not supplied (short circuit protection)
 - See ACW BUS 2 OFF procedure in chapter 2.05.04.

	ELECTRICAL SYSTEM		1.06.40		
	AC WILD FREQUENCY		P 6	001	
					DEC 96

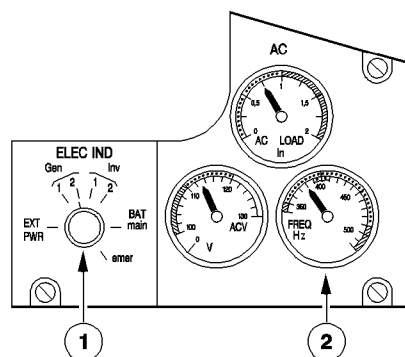
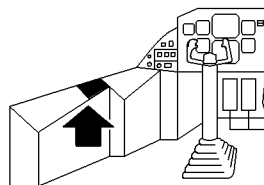
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40.4 LATERAL MAINTENANCE PANEL

On LH maintenance panel, a rotary selector is provided, with several indicators. These devices are to be used for maintenance purpose only. Maintenance panel is covered with a transparent cover, to avoid in flight operation.

CURRENT CHECK

R0FA-01-06-40-006-A001AA



① Rotary Selector

Allows to connect selected pick-up points of the electrical network to the indicators.

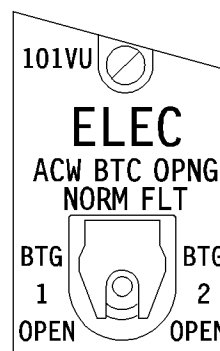
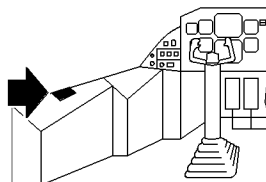
"GEN" position selects AC WILD Generator on AC indicators.

② AC indicators


Refer to AC CONSTANT FREQUENCY lateral maintenance panel description.

ACW BUS TIE CONTACTORS OPERATING SELECTOR

R0FA-01-06-40-006-B001AA



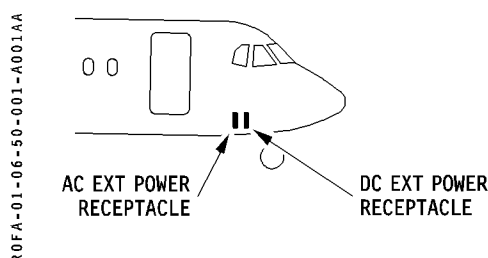
It is used to open the corresponding AC Wild bus tie contactor.

	ELECTRICAL SYSTEM		1.06.50		
	EXTERNAL POWER		P 1	001	
					DEC 96

AA

50.1 DESCRIPTION

The DC and ACW electrical power system can be supplied from ground power sources, connected via the separate « External Power » receptacles which are located on the lower right side of the fuselage, just aft of the nose gear.



DC SUPPLY

- * The power is controlled via the BUS POWER CONTROL UNIT (BPCU) which provides protection for :
 - overvoltage
 - under voltage
 - overcurrent
 - incorrect polarity

When the above conditions are in the correct status, EXT PWR is considered to be of acceptable quality. AVAIL light illuminates green in the "DC" EXT PWR pb.

- * The AVAIL light being illuminated, the "DC" EXT PWR pb may be selected ON. The AVAIL light remains illuminated and the ON light illuminates blue.

Note : As soon as EXT PWR is connected, checked acceptable by the BPCU and selected ON, it has priority over the engine driven generators.


AC SUPPLY

- * The power is controlled via the BUS POWER CONTROL UNIT (BPCU) which provides protection for :
 - voltage limits
 - phase sequence
 - frequency limits
 - open phase
 - overload

When the above conditions are in the correct status, the EXT PWR is considered to be of acceptable quality. The AVAIL light illuminates green in the "ACW" EXT PWR pb and this pb may be selected ON if associated contactors are closed.

- ACW SVCE BUS pb on the cabin attendant panel may be selected ON :
 - AVAIL light remains illuminated
 - ON light illuminates blue

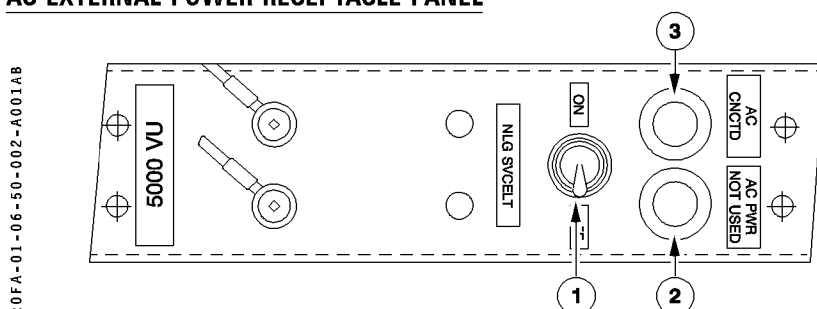
Note : As soon as EXT PWR is connected, checked acceptable by the BPCU and selected ON, it has priority over the "propeller" driven generators.

	ELECTRICAL SYSTEM		1.06.50		
	EXTERNAL POWER		P 2	001	
					DEC 96

AB

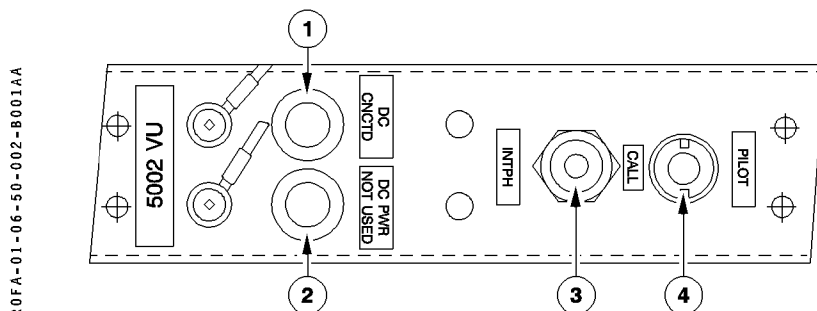
50.2 CONTROLS

AC EXTERNAL POWER RECEPTACLE PANEL




- ① Nose Landing Gear Service Light Switch
Allows operation of the service light in nose gear bay.
- ② "AC Power not used" light (white)
Is on when AC external power is connected and ACW SVCE BUS is not used.
- ③ "AC Connected" light (white)
Is on when AC external power is connected.

DC EXTERNAL POWER RECEPTACLE PANEL



- ① "DC connected" light (white)
Is on when DC external power is connected to the aircraft.
- ② "DC Power not used" light (white)
Is on when DC external power is connected to the aircraft, and DC SVCE BUS is not used.
- ③ Interphone Jack
Used by ground mechanic to connect a headset to communicate with crew.
- ④ Pilot call button
When pressed in, sends a call (aural and visual) to the cockpit : "Mechanic call" light illuminates on the overhead panel.

	ELECTRICAL SYSTEM		1.06.50		
	EXTERNAL POWER		P 3	001	
					DEC 96

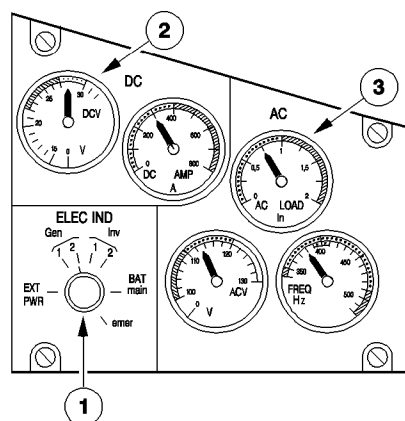
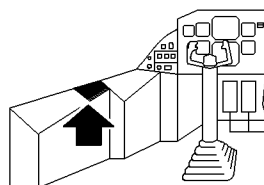
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50.3 LATERAL MAINTENANCE PANEL

On LH maintenance panel, a rotary selector is provided, with several indicators. These devices are to be used for maintenance purpose only. Maintenance panel is covered with a transparent cover, to avoid in flight operation.

CURRENT CHECK

R0FA-01-06-50-003-A001AA



① Rotary Selector

Allows to connect selected pick-up points of the electrical network to the indicators.


"EXT PWR" position indicates on DC or/and AC indicators.

② DC indicators

Refer to DC power lateral maintenance panel description.

③ AC indicators

Refer to AC Constant frequency lateral maintenance panel description.


	ELECTRICAL SYSTEM DISTRIBUTION EQUIPMENT LIST	1.06.60		
		P 1	070	
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Note : “” = option*


DC BUS 1

ATA	SYSTEM	FUNCTION
21	AIR CONDITIONING	<ul style="list-style-type: none"> - DUCT/COMPT Cockpit and cabin Temperature IND - Automatic Pressure CTL - TURBOFAN SOV 1 CTL - EXTRACT FAN PWR SPLY (Back-up of DC BUS 2)
23	COMMUNICATIONS	<ul style="list-style-type: none"> * - SEL CAL * - HF 1 when two HF are installed * - FLIGHT INTERPHONE and AUDIO CONTROL PANEL OBSV - HF FERRY
27	FLIGHT CONTROLS	<ul style="list-style-type: none"> - SPOILERS IND - STICK PUSHER PWR and CTL - LEFT STICK SHAKER
28	FUEL	<ul style="list-style-type: none"> - LP VALVE 1 (Normal) - TANK TEMP IND
30	ICE AND RAIN PROTECTION	<ul style="list-style-type: none"> - CAPT STATIC PORTS - STBY STATIC PORTS - LH SIDE WINDOW ANTI ICING - RH WINDSHIELD HTG IND
31	INDICATING/RE-CORDING	<ul style="list-style-type: none"> - MFC 1B (Primary)
33	LIGHTS	<ul style="list-style-type: none"> - GENERAL ILLUMINATION : LEFT LATERAL RAMP (1 FLUORESCENT LIGHT OUT OF 2) - CAPT LTS : DOME, CHARTHOLDER, CONSOLE, READING - F/O DOME (Normal) - STORM - F/O PANELS - NAVIGATION (Back-up of DC SVCE BUS) - ANNUNCIATOR LT TEST - BEACON (Back-up of DC SVCE BUS)

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				JUN 97

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ATA	SYSTEM	FUNCTION
34	NAVIGATION	<ul style="list-style-type: none"> - WEATHER RADAR - RADIO ALTIMETER - GPWS - G/S IND - STBY ALTIMETER VIBRATOR - DME 1 - AHRS 2 (auxiliary) Back-up - DC BUS 2, IN FLIGHT (Primary) - DC EMER BUS, ON GROUND (Auxiliary)
36	PNEUMATIC	<ul style="list-style-type: none"> - BLEED LEAK IND - CROSS FEED VALVE and IND - HP VALVE 1
61	PROPELLERS	<ul style="list-style-type: none"> - OVSPD TEST ENG 1 - AFU 1 (Normal) - BALANCE TEST
73	ENGINE FUEL and CTL	<ul style="list-style-type: none"> - FUEL FLOW, FUEL USED IND 1 - FUEL TEMP IND 1 - FUEL CLOG IND 1 - EEC 1 - GROUND IDLE SOLENOID SPLY
79	OIL	<ul style="list-style-type: none"> - PRESS, TEMP IND 1

	ELECTRICAL SYSTEM DISTRIBUTION EQUIPMENT LIST	1.06.60		
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DC BUS 2

ATA	SYSTEM	FUNCTION
21	AIR CONDITIONING	<ul style="list-style-type: none"> - Landing elevation IND - TURBOFAN SOV 2 CTL - EXTRACT FAN PWR SUPPLY (Primary)
23	COMMUNICATION	<ul style="list-style-type: none"> - VHF 2
26	FIRE PROTECTION	<ul style="list-style-type: none"> - NAC 1 (when installed) and 2 OVHT DET
27	FLIGHT CTL	<ul style="list-style-type: none"> - PITCH TRIM STBY COMMAND (Back-up of DC EMER BUS for NORMAL command) - RIGHT STICK SHAKER
28	FUEL	<ul style="list-style-type: none"> - LP VALVE 2 (Normal)
29	HYDRAULIC POWER	<ul style="list-style-type: none"> - DC AUX HYD PUMP NORM CTL, IND and PWR in flight
30	ICE and RAIN PROTECTION	<ul style="list-style-type: none"> - DE ICE VALVES - ENG 2 BOOTS A and B (Normal) - WINGS and EMPENNAGE BOOTS B (Normal) - F/O WIPER - F/O STATIC PORTS - F/O PROBES IND - LH WINDSHIELD HTG INDICATOR - RH SIDE WINDOW ANTI ICING
31	INDICATING/RE-CORDING	<ul style="list-style-type: none"> - F/O CLOCK - MFC 2B (Primary)
32	LANDING GEAR	<ul style="list-style-type: none"> - WOW 2 CTL - Secondary IND

	ELECTRICAL SYSTEM DISTRIBUTION EQUIPMENT LIST	1.06.60		
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ATA	SYSTEM	FUNCTION
33	LIGHTS	<ul style="list-style-type: none"> - PASSENGER SIGNS - WING LIGHTS - F/O LTS : CHARTHOLDER, CONSOLE, READING - UTILITY SPOT and FLOOD - NORMAL INSTRUMENTS SPLY and LABELS INTEGRATED LT CTL - TAXI and TAKE OFF CTL - GENERAL ILLUMINATION : RIGHT LATERAL RAMP (1 FLUORESCENT LIGHT OUT OF 2)
34	NAVIGATION	<ul style="list-style-type: none"> * - ATC 2 * - DME 2 - VOR/ILS 2 * - ADF 2 - CAPT RMI - SGU 2 - F/O EADI - AHRS 1 (Auxiliary) (Back-up of DC EMER BUS) - AHRS 2 (Primary) - F/O EHSI
36	PNEUMATIC	<ul style="list-style-type: none"> - HP VALVE 2
52	DOORS	<ul style="list-style-type: none"> - ALERTS
61	PROPELLERS	<ul style="list-style-type: none"> - OVSPD TEST ENG 2 - AFU 2 (Normal)
73	ENGINE FUEL and CTL	<ul style="list-style-type: none"> - FUEL FLOW, FUEL USED IND 2 - FUEL TEMP IND 2 - FUEL CLOG IND 2 - EEC 2 (Normal) - IDLE GATE FAIL IND
79	OIL	<ul style="list-style-type: none"> - Press, Temp IND 2

	ELECTRICAL SYSTEM DISTRIBUTION EQUIPMENT LIST	1.06.60		
		P 5	070	
				JUN 97

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HOT EMER BAT BUS


ATA	SYSTEM	FUNCTION
24	ELECTRICAL POWER	<ul style="list-style-type: none"> - DC EMER BUS AND DC STBY BUS CTL (BUSSES REMAIN SUPPLIED BY DC BUS 1) - EMER BAT AMMETER - EMER BAT VOLT IND - EMER BUS and INV 1 ON EMER BAT IND (ARROW) - TRU CTL and IND (when installed)
31	INDICATING/RE-CORDING	<ul style="list-style-type: none"> - MFC 1 MOD A (Auxiliary) (Back-up of DC ESS BUS)
34	NAVIGATION	<ul style="list-style-type: none"> - STBY HORIZON Back-up - ADC 1 (Back-up) - ADC 2 (Back-up)

	ELECTRICAL SYSTEM DISTRIBUTION EQUIPMENT LIST	1.06.60		
		P 6	250	
				SEP 04

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HOT MAIN BAT BUS


ATA	SYSTEM	FUNCTION
24	ELECTRICAL POWER	<ul style="list-style-type: none"> - DC EXT PWR CONTACTOR CTL - MAIN BAT AMMETER - ESS BUS and INV 1 ON MAIN BAT IND (ARROW) - DC GND/HDL XFR BUS SPLY (Back-up of EXT PWR) - MAIN BAT VOLT IND - MAIN and EMER BAT CHGE INHIBIT - DC ESS BUS and INV 1 CTL (REMAIN SUPPLIED BY DC BUS 1)
26	FIRE DETECTION	<ul style="list-style-type: none"> - ENG FIRE EXTINGUISHING CTL and IND (Back-up of DC EMER BUS)
29	HYDRAULIC POWER	<ul style="list-style-type: none"> - DC AUX HYD PUMP GND SPLY, CTL and IND (Back-up of DC BUS 2)
31	INDICATING/ RECORDING	<ul style="list-style-type: none"> - MFC 2A (Auxiliary) (Back-up of DC EMER BUS)
R 33	LIGHTS	<ul style="list-style-type: none"> - ENTRANCE
61	PROPELLERS	<ul style="list-style-type: none"> - A/F AUX PUMPS PWR

	ELECTRICAL SYSTEM DISTRIBUTION EQUIPMENT LIST	1.06.60		
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DC EMER BUS

ATA	SYSTEM	FUNCTION
21	AIR CONDITIONING	<ul style="list-style-type: none"> - OVERBOARD and UNDERFLOOR VALVES CTL and IND and AIR COOLING HIGH FLOW IND - PRESSURE IND and EXCESS ALTITUDE IND - PNEUMATIC OUTFLOW VALVES
22	AUTO-FLIGHT	<ul style="list-style-type: none"> - AP/FD COMPUTER and GUIDANCE IND (when installed)
23	COMMUNICATIONS	<ul style="list-style-type: none"> - VHF - F/O COCKPIT AMPLIFIER - RCAU
24	ELECTRICAL POWER	<ul style="list-style-type: none"> - GCU 1 DC (Back-up) - AC BUS OFF 1 and 2 IND - ACW BUS OFF 1 and 2 IND - INV FAULT 1 IND - DC BUS OFF 1 and 2 IND - BPCU DC (Back-up) - DC STBY BUS IND (UNDV - OVRD) - EMER BAT : CHG IND - DC STBY BUS CTL (BUS REMAIN SUPPLIED BY DC BUS 1) - AC 1 BUSSES CTL (BUSSES REMAIN SUPPLIED BY INV 2)
26	FIRE DETECTION	<ul style="list-style-type: none"> - ENG FIRE EXTINGUISHING CTL and IND (Normal) - FIRE HANDLE IND ENG 1 and 2 - FIRE DETECTION ENG 1 and 2
27	FLIGHT CONTROLS	<ul style="list-style-type: none"> - PITCH TRIM NORMAL COMMAND - RUDDER TRIM - AILERON TRIM - AILERON LOCKING IND
28	FUEL	<ul style="list-style-type: none"> - LP VALVES 1 and 2 and IND (Back-up of DC BUS 1 - DC BUS 2)
29	HYDRAULIC POWER	<ul style="list-style-type: none"> - BLUE PUMP CTL and IND - GREEN PUMP IND
30	ICE and RAIN PROTECTION	<ul style="list-style-type: none"> - AAS IND and ALERTS - AAS CTL - WING, EMPENNAGE BOOTS A - ENG 1 BOOTS A and B - PROPELLERS 1 and 2 ANTI-ICING CTL and IND - WING, EMPENNAGE BOOTS B and ENG 2 BOOTS A and B (Back-up of DC BUS 2) - HORNS ANTI-ICING IND and CTL

	ELECTRICAL SYSTEM DISTRIBUTION EQUIPMENT LIST	1.06.60		
		P 8	570	
				JUN 97

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ATA	SYSTEM	FUNCTION
31	INDICATING/RE-CORDING	<ul style="list-style-type: none"> - CAPT CLOCK - FDAU ON GROUND - MFC 1B (Auxiliary) (Back-up of DC BUS 1) - MFC 2A (Primary) - MFC 2B (Auxiliary) (Back-up of DC BUS 2)
32	LANDING GEAR	<ul style="list-style-type: none"> - ANTISKID OUTBOARD - NOSE WHEEL STEERING - WOW 1 CTL
33	LIGHTS	<ul style="list-style-type: none"> - CAPT PANELS - PYLON - STBY COMPASS - LAVATORY (EMERGENCY) - F/O DOME (Back-up of DC BUS 1)
34	NAVIGATION	<ul style="list-style-type: none"> - ATC 1 - AHRS 2 (ON GROUND, Auxiliary) (Back-up of IN FLIGHT : <ul style="list-style-type: none"> - DC BUS 2, Primary - DC BUS 1, Auxiliary - AHRS 1 (Primary) - ADC 1 (Primary) - ADC 2 (Primary)
61	PROPELLERS	<ul style="list-style-type: none"> - AFU 1 and 2 (Back-up of DC BUS 1 - DC BUS 2) - A/F AUX PUMPS CTL - TORQUE IND 1 and 2 - PEC 1 and PEC 2 (Normal), associated PVM and PIU.
73	ENGINE FUEL and CTL	<ul style="list-style-type: none"> - EEC 1 and 2 PWR and IND (Back-up of <ul style="list-style-type: none"> - DC BUS 1 - DC BUS 2
76	ENGINE CTL	<ul style="list-style-type: none"> - CL FIRE IND 1 and 2

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		P 9	350	
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DC ESS BUS

ATA	SYSTEM	FUNCTION
21	AIR CONDITIONING	<ul style="list-style-type: none"> - PACK 1 and RECIRC FAN 1 IND - PACK 1 VALVE - EXTRACT FAN CTL - PACK 2 and RECIRC FAN 2 IND - PACK 2 VALVE - LANDING ELEVATION IND (ALPHANUMERIC DISPLAY) - COCKPIT and CABIN AUTOMATIC and MANUAL TEMPERATURE CTL and IND
22	AUTOFLIGHT	<ul style="list-style-type: none"> - AP OFF IND - AP DISC BY QUICK DISCONNECT
23	COMMUNICATIONS	<ul style="list-style-type: none"> - FLIGHT INTERPHONE CAPT and F/O - AUDIO CONTROL PANELS CAPT and F/O - CAPT COCKPIT AMPLIFIER - PASSENGER ADDRESS - MECHANIC CALL - COCKPIT and CABIN CREW CALL - CVR
24	ELECTRICAL POWER	<ul style="list-style-type: none"> - GCU 2 DC (Back-up) - GCU 1 and 2 ACW (Back-up) - BPCU ACW (Back-up) - DC SVCE and UTLY BUSES 1 and 2 CTL - MAIN BAT CHG IND - INV 2 FAULT IND - AC 2 and STBY BUSES CTL (BUSES REMAIN SUPPLIED BY INV 1)
26	FIRE DETECTION	<ul style="list-style-type: none"> - TOILETS SMK DET - AVIONICS SMK DET - FWD and AFT COMPT SMK DET - AFT COMPT and TOILETS DET FANS CTL and IND - FWD COMPT DET FANS CTL and IND
27	FLIGHT CONTROLS	<ul style="list-style-type: none"> - CLUTCH REENGAGEMENT SYSTEM - AILERON LOCKING CTL
28	FUEL	<ul style="list-style-type: none"> - FQI and 2 - CROSS FEED VALVE - STARTING PUMP 1 and 2 and MOTIVE FLOW VALVES 1 and 2

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ATA	SYSTEM	FUNCTION
29	HYDRAULIC POWER	– GREEN PUMP CTL
30	ICE and RAIN PROTECTION	– DE-ICING ISOLATION VALVES – LH and RH SIDE WINDOWS ANTI-ICING IND – CAPT and STBY and TAT PROBES IND – CAPT WIPER
31	INDICATING/RECORDING	– FDAU (In flight) – MFC 1A (Primary)
33	LIGHTS	– GENERAL ILLUMINATION : MIN CAB LT – RIGHT LATERAL RAMP (1 FLUORESCENT LIGHT OUT OF 2) (Back-up of DC SVCE BUS) – LEFT LANDING CTL – RIGHT LANDING CTL
34	NAVIGATION	– TAS TEMP IND (ALPHANUMERIC DISPLAY) – STBY HORIZON NORMAL (Back-up HOT EMER BAT BUS)
35	OXYGEN	– PRESSURE IND – PILOTS and PASSENGERS VALVES CTL (PILOTS VALVE REMAINS OPEN) * – PAX MASKS DROP CTL
36	PNEUMATIC	– BLEED VALVE 1 PWR and IND – BLEED VALVE 2 PWR and IND
61	PROPELLERS	– NP 1 IND – NP 2 IND – PROP BRAKE PWR, CTL and IND – PEC 1 and PEC 2 (Back-up of DC EMER BUS).
74	IGNITION	– ENG 1 – ENG 2
77	ENGINE IND	– ITT IND 1 and 2 – NH/NL IND 1 and 2
80	STARTING	– ENG 1 – ENG 2

	ELECTRICAL SYSTEM		1.06.60	
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				JUN 97

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DC STBY BUS


ATA	SYSTEM	FUNCTION
22	AUTO FLIGHT	<ul style="list-style-type: none"> - AP/FD SERVOS - ADU
27	FLIGHT CONTROLS	<ul style="list-style-type: none"> - FLAPS CTL
29	HYDRAULIC POWER	<ul style="list-style-type: none"> - PRESS TRIPLE IND - INTERCONNECTING VALVE
32	LANDING GEAR	<ul style="list-style-type: none"> - PRIMARY IND - LANDING GEAR CTL (HYDRAULIC VALVE) - ANTISKID INOP and BRAKE OVTEMP IND - R and L INBOARD and OUTBOARD BRAKES TEMP XMITTERS
33	LIGHTS	<ul style="list-style-type: none"> - EMERGENCY
34	NAVIGATION	<ul style="list-style-type: none"> - VOR/ILS/MKR 1 - SGU 1 - CAPT EADI - RMI F/O - ADF 1 * - OMEGA - CAPT EHSI

	ELECTRICAL SYSTEM DISTRIBUTION EQUIPMENT LIST	1.06.60		
		P 12	050	
				DEC 96

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DC SVCE BUS


ATA	SYSTEM	FUNCTION
24	ELECTRICAL POWER	* – GALLEY
33	LIGHTS	– LOGO – FORWARD, AFT CARGO and MAINTENANCE COMPARTMENT – NAVIGATION (Normal) – LAVATORY (Normal) – GENERAL ILLUMINATION : . RIGHT LATERAL RAMP (1 FLUORESCENT LIGHT OUT OF 2) (Normal) . LEFT LATERAL RAMP (1 FLUORESCENT LIGHT OUT OF 2) * – PASSENGERS READING CTL * – GALLEY AREA – BEACON (Back-up of DC BUS 1) – WHEEL WELLS and AFT ELEC COMPT – DC SVCE PLUG
38	WATER/WASTE	– TOILET SYSTEM
61	PROPELLERS	– A/F AUX PUMPS MANUAL CTL (TEST ON GROUND)

	ELECTRICAL SYSTEM DISTRIBUTION EQUIPMENT LIST	1.06.60		
		P 13	001	
				DEC 96

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DC UTLY BUS 1


ATA	SYSTEM	FUNCTION
21	AIR CONDITIONING	– RECIRC FAN 1 CTL
23	COMMUNICATIONS	* – TAPE PLAYER
33	LIGHTS	– CALL – GENERAL ILLUMINATION : LEFT CENTRAL RAMP

	ELECTRICAL SYSTEM		1.06.60		
	DISTRIBUTION EQUIPMENT LIST		P 14	001	
					DEC 96

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DC UTLY BUS 2


ATA	SYSTEM	FUNCTION
21	AIR CONDITIONING	– RECIRC FAN 2 CTL
33	LIGHTS	– GENERAL ILLUMINATION : RIGHT CENTRAL RAMP

	ELECTRICAL SYSTEM		1.06.60		
	DISTRIBUTION EQUIPMENT LIST		P 15	200	
					SEP 04

DC GND HDLG BUS

ATA	SYSTEM	FUNCTION
28	FUEL	– FUELING CTL and IND
52	DOORS	– CARGO DOOR CTL and IND


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	ELECTRICAL SYSTEM DISTRIBUTION EQUIPMENT LIST	1.06.60		
		P 16	001	
				DEC 96

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115V AC STBY BUS


ATA	SYSTEM	FUNCTION
26	FIRE DETECTION	– ALL SMOKE DET FANS PWR
R 30	ICE and RAIN PROTECTION	– PITOT STBY (Back-up of 115V ACW BUS 1)
31	INDICATING/RECORDING	– DFDR
R 33	LIGHTS	– EMER INSTRUMENTS SPLY INTEGRATED LT (Auxiliary) (Back-up of 115V ACW BUS 1)

	ELECTRICAL SYSTEM DISTRIBUTION EQUIPMENT LIST	1.06.60		
		P 17	001	
				DEC 96

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115V AC BUS 1


ATA	SYSTEM	FUNCTION
24	ELECTRICAL POWER	– INV 1 V and FREQ IND
31	INDICATING RECORDING	* – QAR
34	NAVIGATION	– WEATHER RADAR
36	PNEUMATIC	– BLEED LEAK DETECTOR

	ELECTRICAL SYSTEM DISTRIBUTION EQUIPMENT LIST	1.06.60		
		P 18	001	
				DEC 96

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115V AC BUS 2

ATA	SYSTEM	FUNCTION
21	AIR CONDITIONING	– CABIN TEMPERATURE SENSOR FAN
24	ELECTRICAL POWER	– INV 2 V and FREQ IND
31	INDICATING/RECORDING	* – QAR
33	LIGHTS	– AC SVCE PLUG
34	NAVIGATION	– GPWS PWR

	ELECTRICAL SYSTEM DISTRIBUTION EQUIPMENT LIST	1.06.60		
		P 19	001	
				DEC 96

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26V AC STBY BUS


ATA	SYSTEM	FUNCTION
27	FLIGHT CONTROLS	– FLAPS POS DET and IND
31	INDICATING/RECORDING	– SURFACES POSITIONS CTL and FDAU SYNCHRO REF
34	NAVIGATION	– COURSE and HEADING 1 SELECT – SYNCHRO REF FOR : . BEARING FROM VOR 1 TO RMI and SGU 1 and 2 . BEARING FROM ADF 1 TO RMI and SGU 1 and 2 . HEADING FROM AHRS 1 TO RMI 2 – ALTI CAPT + ALTITUDE SYNCHRO REF FOR ADC 1 – ASI/VSI CAPT + TAS TEMP IND * – SIGNALS REF . TAS FROM ADC1 TO OMEGA . HEADING FROM AHRS 1 TO OMEGA . STEERING – COMMAND FROM OMEGA TO AFCS

	ELECTRICAL SYSTEM		1.06.60		
	DISTRIBUTION EQUIPMENT LIST		P 20	001	
					DEC 96

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26V AC BUS 1


ATA	SYSTEM	FUNCTION
27	FLIGHT CONTROLS	– TRIMS IND
34	NAVIGATION	– INS 1 REF

	ELECTRICAL SYSTEM		1.06.60		
	DISTRIBUTION EQUIPMENT LIST		P 21	001	
					DEC 96

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26V AC BUS 2


ATA	SYSTEM	FUNCTION
34	NAVIGATION	<ul style="list-style-type: none"> - ASI/VSI F/O - F/O ALTI + ALTITUDE SYNCHRO REF FOR ADC 2 - SYNCHRO REF FOR : <ul style="list-style-type: none"> . BEARING FROM VOR 2 TO RMI and SGU 1 and 2 . BEARING FROM ADF 2 TO RMI and SGU 1 and 2 . HEADING FROM AHRS 2 TO RMI 1 - COURSE and HEADING 2 SELECT - INS 2 REF

	ELECTRICAL SYSTEM DISTRIBUTION EQUIPMENT LIST	1.06.60		
		P 22	020	
				DEC 96

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115 ACW BUS 1


ATA	SYSTEM	FUNCTION
30	ICE and RAIN PROTECTION	<ul style="list-style-type: none"> – CAPT PITOT – CAPT ALPHA – CAPT TAT – STBY PITOT (Normal)
33	LIGHTS	<ul style="list-style-type: none"> – EMER INSTRUMENTS SPLY INTEGRATED LT (Primary) – NORMAL INSTRUMENTS SPLY and LABELS INTEGRATED LT PWR – LEFT LANDING PWR – LEFT and REAR STROBES * – PASSENGERS READING PWR (LEFT SIDE)

	ELECTRICAL SYSTEM DISTRIBUTION EQUIPMENT LIST	1.06.60		
		P 23	001	
				DEC 96

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115 ACW BUS 2

ATA	SYSTEM	FUNCTION
30	ICE and RAIN PROTECTION	<ul style="list-style-type: none"> – F/O PITOT – F/O ALPHA – F/O TAT – ICE DETECTOR
33	LIGHTS	<ul style="list-style-type: none"> – TAXI and TAKE OFF PWR – RIGHT LANDING PWR – RIGHT STROBE * – PASSENGERS READING PWR (RIGHT SIDE)

	ELECTRICAL SYSTEM		1.06.60		
	DISTRIBUTION EQUIPMENT LIST		P 24	001	
					DEC 96

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115 ACW SVCE BUS

ATA	SYSTEM	FUNCTION
24	ELECTRICAL POWER	* – GALLEY
33	LIGHTS	– ACW SVCE PLUG
