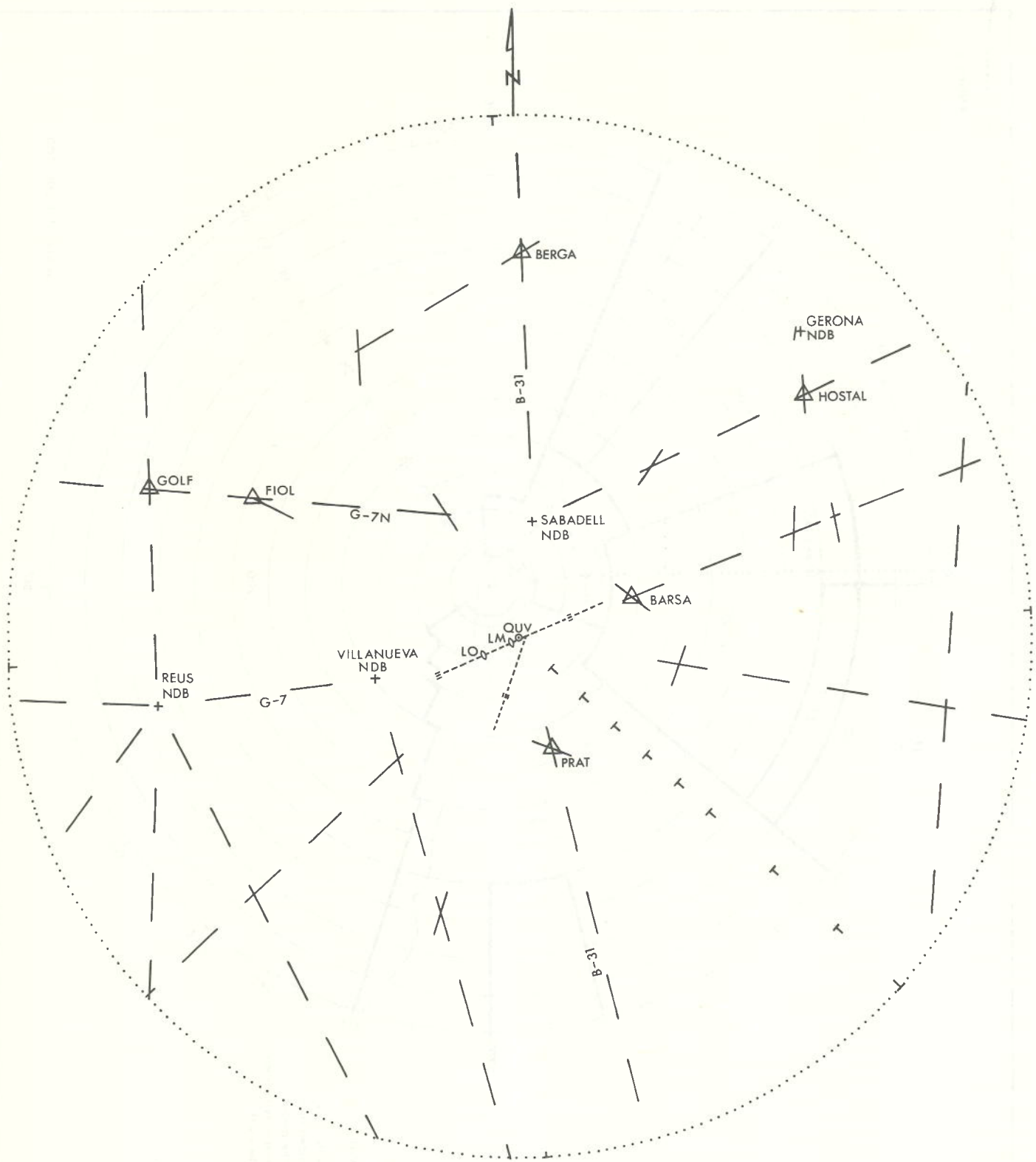


SCALE 1:1,000,000

BARCELONA

CHART SHOWING MINIMUM OBSTACLE CLEARANCE ALTITUDES (MOCA)

Aircraft may proceed after takeoff within the area marked with MOCA 1200', provided that there are no climb restrictions until the aircraft reaches MOCA and it will be given lateral separation in relation to the towers situated to the north of the Airport



VIDEO MAP
 ASR-5
 BARCELONA

PHOTOGRAPHIC REPRODUCTION
 SCALE APPROX 1:1,000,000

**ANNEX 2 FLIGHT INFORMATION AND CONTROL CENTRE
TECHNICAL OFFICE**

Operations Circular No 3/70

Subject: Operation of Eastern Radar Sector

Concerns: All control personnel, Barcelona ACC

Effective: 4 May 1970

From the above date, the Eastern Radar Sector will come back into operation with the operating characteristics and rules indicated below:

A Limits

Lateral

As indicated on the attached chart.

Vertical

From ground level to FL250 inclusive, except on the sector of route B-31 south of Point Prat, where the upper limit remains fixed at FL160 inclusive.

B VHF frequency

124.7

C Radar screen

Screen 2 (Centre)

D Traffic reporting points

DEP NDB SBD VOR QUV

E Co-ordination between east and west radar sectors

1 East-west overflights

a *Transfer of communications and radar identity*

On the segment between VOR QUV and NDB VNV

b *Transfer of control*

VOR QUV

2 Arrivals B - 31/G-7N

- Transfer of communications, radar identity and control:
at the co-ordinated time and point.

F Co-ordination between East and Central Radar Sectors

- 1 Overflights heading south between FL170 and FL250 (both inclusive)
 - a *Transfer of communications and radar identity*
On the sector between VOR QUV and Point Prat
 - b *Transfer of control*
Point Prat

G Preparation of progress slips for flights on route UB31 in Barcelona TMA

- 1 Flights on route B-31
 - a *Destination Barcelona*
 - ONE slip for NDB SBD (Eastern Radar Sector)
 - ONE slip for LDM QA (Western Radar Sector)

In addition, for jet flights

 - ONE slip for VOR QUV (Central Radar Sector)
 - b *Destination Palma and points south of Barcelona – Conventional and Turbo-Prop*
 - ONE slip for NDB SBD (Eastern Radar Sector)
 - ONE slip for VOR QUV (Eastern Radar Sector)
 - ONE slip for VOR QUV (Central Radar Sector)

Jets

 - ONE slip for VOR QUV (Central Radar Sector)

Note: In the event of receiving a jet flight from Bordeaux at a level below 260, a further two slips must be prepared:

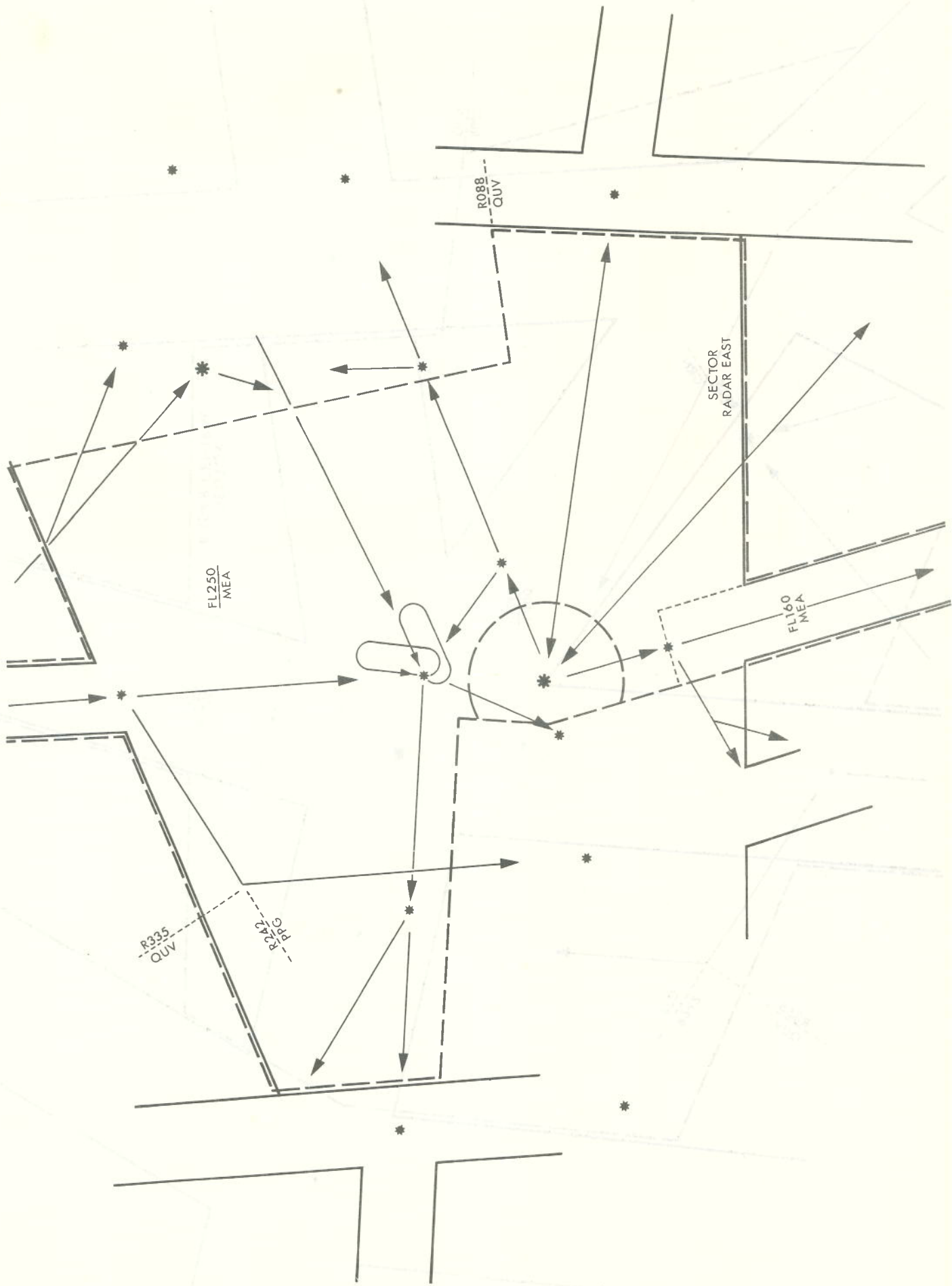
- ONE NDB SBD
- ONE VOR QUV, to permit control of that flight by Eastern Radar Sector as far as VOR QUV.

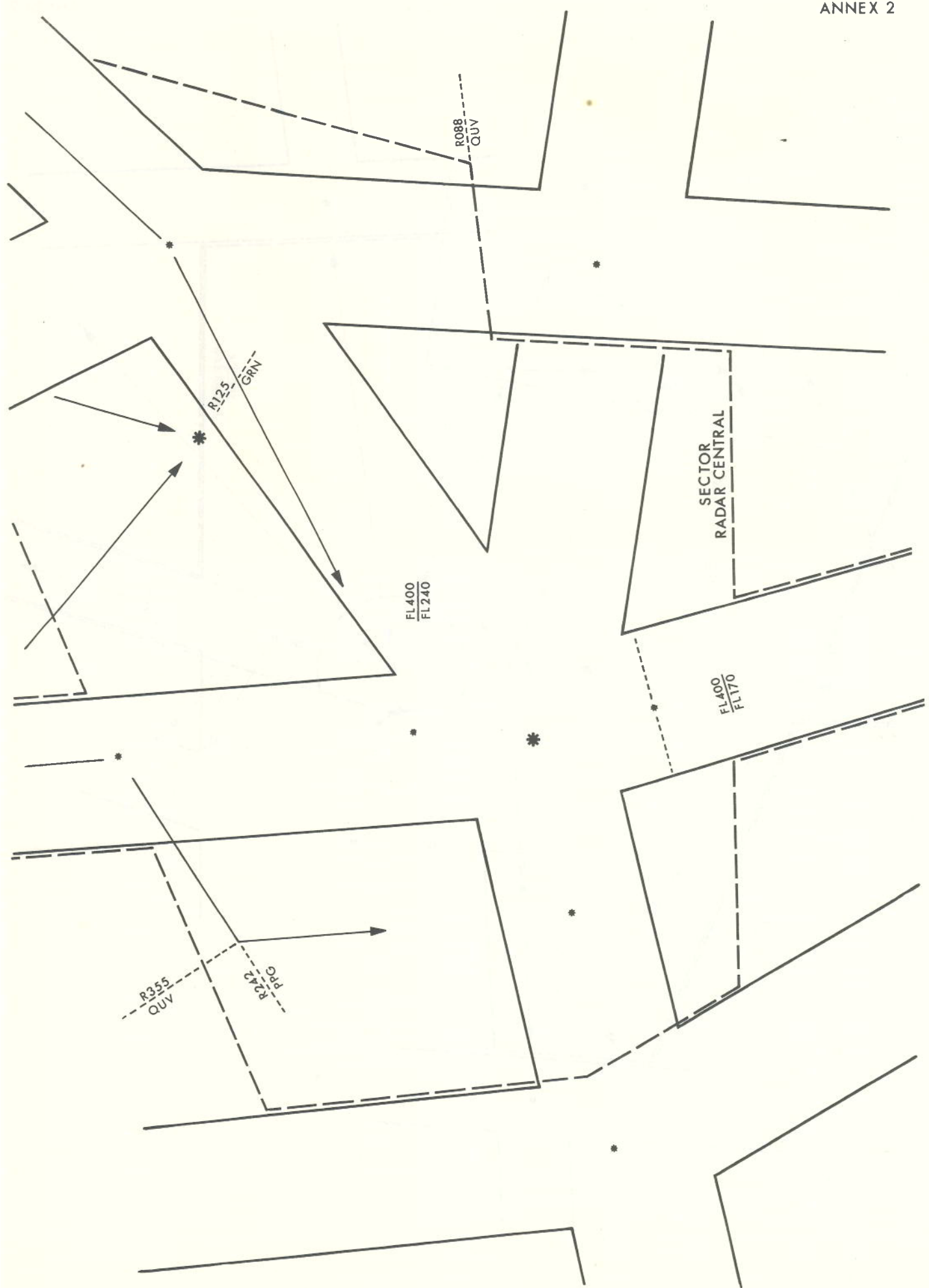
H Special procedures for traffic guidance in TMA

Overflights QUV-BGR, between levels 200 and 250 inclusive

When descents are planned from Level 260 on the Bagur-Sabadell sector, QUV-BGR flights between Levels 200 and 250 inclusive shall be authorised to follow route QUV-TOSSA-BGR, unless as a result of direct co-ordination, radar separation can be assured between inbound flights and the aforementioned overflights.

Barcelona, 2 May 1970
Director of the Control Centre
Antonio Aléu Padreny





BARCELONA CONTROL CENTRE

Operations Circular No 4/70

Subject: Operation of Central Radar Sector

Concerns: All control personnel, Barcelona ACC

Effective: 4 May 1970

A Characteristics of the sector

From the above date, the operation of the control sector shall comply with the following rules:

1 **Screen**

Radar 3 (Right)

2 **Frequency**

125.25

3 **Area of responsibility**

As indicated on the attached chart

4 **Vertical limits**

From FL260 inclusive to the upper limit of the TMA and the routes involved, except on route B-31 to the south of Point Prat, where the lower vertical limit is fixed at FL170, inclusive.

B Traffic reporting points

VOR QUV NDB BGR

C Assignment of levels

Unless there is prior co-ordination between sectors or the other ACCs involved, the Central Radar Sector shall assign levels in the following manner:

a *Flights on Route UG-7*

The level agreed with Marseilles shall not be altered until the aircraft reports passing NDB BGR.

b *Flights on Route G-7N*

Levels below FL260 shall not be assigned until the aircraft passes R-125 of VOR GRN (114.1).

D Control of inbound aircraft

1 *Limit of authorisation*

NDB SBD or NDB VNV (for flights on UB-31 authorised to deviate to the right of the air route to facilitate descent).

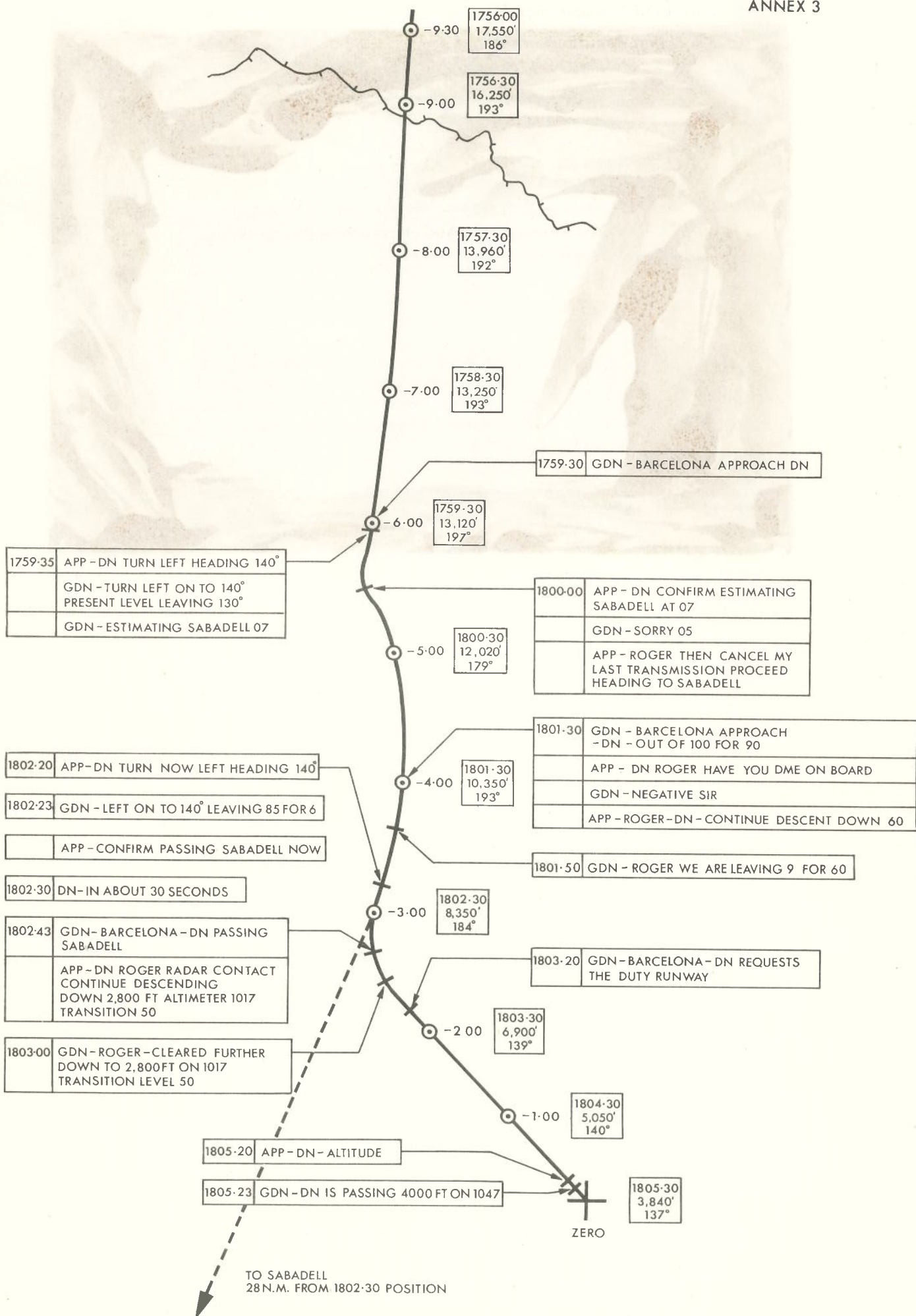
2 *Levels*

As agreed with Eastern Radar Sector.

3 *Transfer of control*

During descent to agreed level, passing through FL260.

Barcelona, 28 April 1970
Director of the Control Centre
Antonio Aléu Padreny



ACCIDENTS INVESTIGATION BRANCH
Department of Trade and Industry

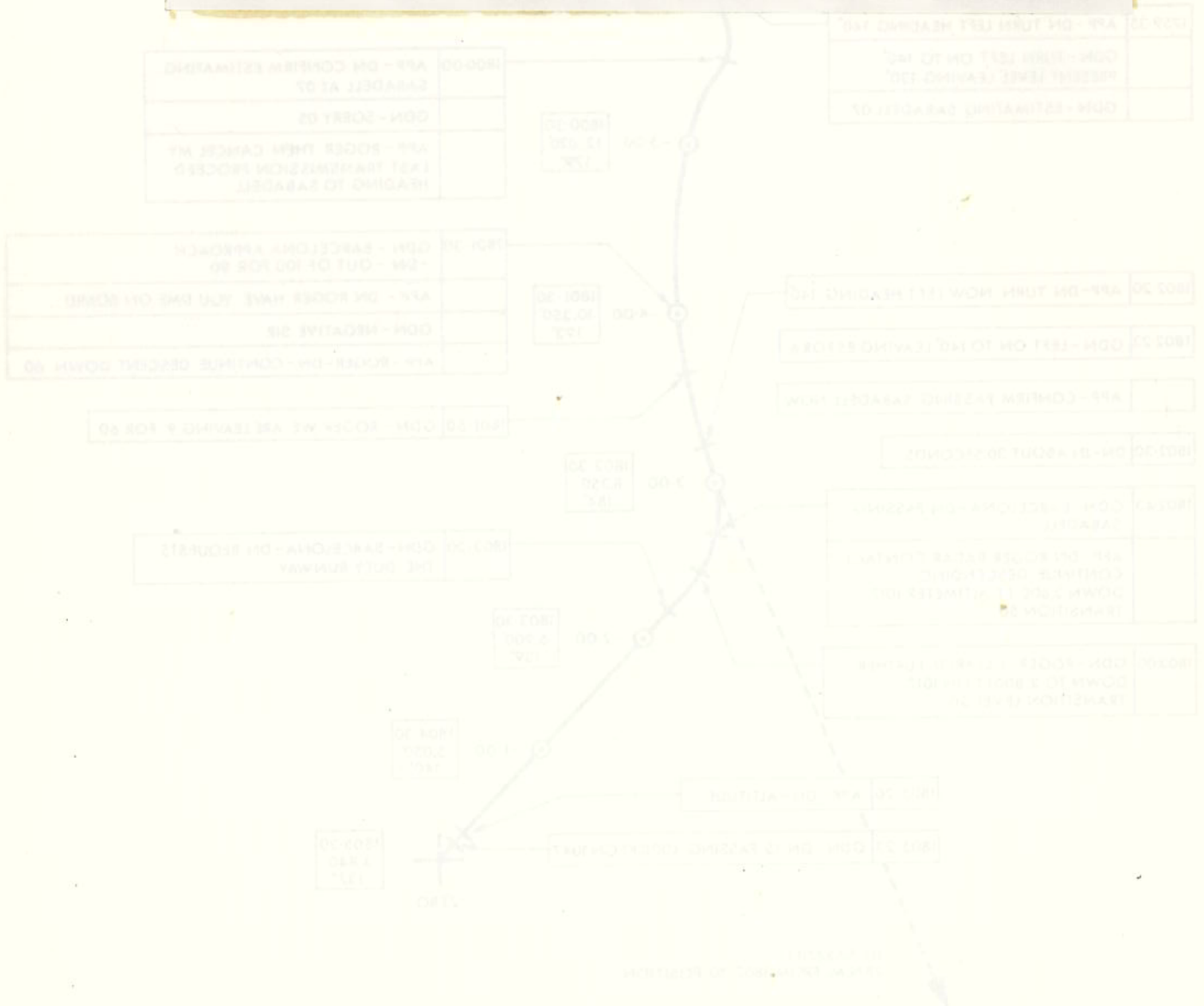
Civil Aircraft Accident Report 1/72

Dan Air Comet 4 G-APDN. Report on the accident which occurred in the Sierra del Montseny, in the Municipal District of Arbucias (Gerona) Spain on 3 July 1970

CORRECTION

The times referred to in the body of this report have all been converted to GMT. Due to an editorial error, the times shown in Annex 4 have not been so adjusted. To bring it into conformity with the rest of the report 3 minutes should be added to all the times given in Annex 4.

London: Her Majesty's Stationery Office
1972



<i>Time</i>	<i>From</i>	<i>Message</i>
1742	GDL	Barcelona this is GAPDL we request descend clearance – as soon as possible.
	ACC	OK cleared to FL 310.
	GDL	Leaving 37 at this time.
	ACC	Roger.
1743	GNB	Barcelona GNB we check QUV at 46 level 290 est. MHN at 06.
	ACC	NB roger .
	ACC	GNB cleared to FL 170 report leaving 290.
1744	GNB	B we are cleared to 170 will call you out of 290.
1745	ACC	GNB leave now FL 290, please.
	GNB	B leaving 29 for 170.
	ACC	OK 15 NM south contact Barcelona 126,5 over.
	GNB	126,5 roger.
	GDL	Barcelona DL is over QUV at 48 FL is 350 for 310 and – we estimate MJV at 10.
	ACC	OK recleared to FL 170 report passing 250.
	GDL	We are cleared to 170 and report thru 25 will do.
1747	ACC	GNB contact Barcelona 126,5 present level now.
	ACC	GNB Barcelona.
	ACC	GAXNB Barcelona.
1748	FTM	Barcelona FTM over QUV 51 FL 280 IBZ 11.
	ACC	TM Barcelona roger contact Barcelona 127,7 now au revoire Mrs.
	FTM	127,7 au révoire.
1749	ACC	GDL cleared to 90 your level now.
	GDL	Passing thru 280 at this time sir, descend down to 9.

125.5 MHz

<i>Time</i>	<i>From</i>	<i>Message</i>
1749	GDN	Barcelona GDN.
	ACC	DN Barcelona.
1750	GDN	Barcelona DN is levelled at 220 requesting a further descend and estimating the Spanish boundary at 47.
	ACC	OK contact Barcelona 124,7; 124,7, over.
	GDN	Gracias.
	GDL	Barcelona GDL is passing thru 25 for 90.
1751	ACC	DL roger, contact Palma 120,7 now good-day.
	GDL	Good-day to you sir.
1802	GNA	Barcelona Britannia GAXNA good evening.
	ACC	NA Barcelona.
	GNA	NA check the boundary at 40 level 330 estimate QUV at 13.
	ACC	OK report Barcelona.
	GNA	NA.
1806	GNA	Barcelona from NA will be possible to routeing direct Ibiza from Barcelona?
	ACC	Unable to approve on account of traffic, proceed on B31 till 285° radial from MHN thru ADX-IBZ.
1807	GNA	Roger.
1808	KL 4550	Barcelona KLM 4550 good afternoon.
	ACC	550 good afternoon go ahead.
	KL 4550	The boundary 12 level 370 QUV 21 for Palma.
	ACC	Roger, report QUV.
1809	KL 4550	Yes sir.
	GNA	Barcelona from NA check QUV 12 level 330 estimate Palma TMA at 22.
	ACC	NA roger clear to FL 240 report leaving 330.
	GNA	Roger for 240 will call you out of 330.

124.7 MHz

<i>Time</i>	<i>From</i>	<i>Message</i>
1743	FRF	Barcelona FBHRF.
	FRF	Barcelona FRF do you read ?
	ACC	?
1744	FRF	FBHRF FL 210 we passed the FIR at 45 estimate in QUV at SJ next.
	ACC	?
	FRF	210 now.
	ACC	?
1746	LEBL a LECP	Mira, un Sr. que se llama FBHRF QUV a los 54 te lo bajaré para 150, te va?
	LECP a LECB	OK.
1749	BX 154	Barcelona, BX 154 buenas tardes.
	ACC	?
	BX 154	Estamos en el UIR nivel 250 manteniendo, QUV a los 02.
1750	ACC	?
	GDN	Barcelona GAPDN.
	GDN	Barcelona GAPDN.
	ACC	? afternoon.
	GDN	Barcelona GDN is level 220 estimating the boundary, the Spanish boundary at this time and requesting further descend.
1751	BX 154	Barcelona BX 154 si fuese posible querriamos bajar a 23 ó a 21.
	ACC	?
	BX 154	Librando ahora 25 para 230 BX 154.
	ACC	?
	GDN	Roger, DN cleared down to 90, leaving 220.
	ACC	?

124.7 MHz

<i>Time</i>	<i>From</i>	<i>Message</i>
1751	GDN	1017 gracias.
	ACC/TWR	Dime? Dime?
1752	TWR/ACC	Autorización IB-045 a Madrid.
	ACC/TWR	Un momento.
	FRF	Barcelona RF.
	ACC/TWR	250 Directo a Reus.
	TWR/ACC	250 Directo a Reus, de acuerdo; oiga le va bien dos tráficos por la 20?
	ACC/TWR	Esto es APP, 119,1 preguntarselo.
	TWR/ACC	Y Vds. no pueden preguntarselo?
	ACC/TWR	No, porque tengo mucho jaleo, es mejor que se lo preguntes alli eh?
	TWR/ACC	Bien, de acuerdo.
	FRF	Barcelona FBHRF.
1753	FRF	Barcelona FBHRF, 124,7 do you read?
	ACC	?
	FRF	RF FL210 passing Barcelona now at 55 estimating SJ at 10.
	ACC	?
	FRF	Roger we report leaving 210 down to 150.
	TWR/ACC	IB-045 listo.
	ACC/TWR	?
	TWR/ACC	A 119,1 ?
	GDN	Barcelona GDN ?
	ACC	?
	GDN	DN is just over the boundary we are leaving 160. estimating Berga at 01.
	ACC	Roger, parece decir 'contact APP'.
1754	GDN	Good-day.

124.7 MHz

<i>Time</i>	<i>From</i>	<i>Message</i>
1754	BX-154	Barcelona 154 230 (ilegible) libre.
	LEPA	BX 154 lo tienes.
	BX-154	Barcelona BX 154 ?
	ACC	154 stand-by.
	LEPA/LEBL	De donde viene ?
	LEBL/LEPA	Es de Bruselas.
	1755	LEPA/LEBL
LEBL/LEPA		Eh ? no lo sé. BX 154 de Bruselas, lo tienes ?
LEPA/LEBL		Yo tengo un DC 7 que venía de Bruselas.
LEBL/LEPA		No, es un CV 99, si, BX 154 CV 99 Bruselas/Palma, est QUV a los 08, te lo bajaré para 150. eh ?
LEPA/LEBL		Para 150, bueno, no para 170.
LEBL/LEPA		170 eh bien, de acuerdo.
1756		ACC
	GDN	DN go ahead.
	ACC	?
	GDN	119,1 gracias.
	ACC	?
	FRF	FRF not yet.
	ACC	?
	FRF	120,5 FRF adios.
	TWR/ACC	Pasa el 131 a Ibiza, pista 20.
	ACC/TWR	131 Ibiza pista 20, un momento.
	ACC/TWR	Para Ibiza 200 directo Ibiza mantenga 2000 pies hasta contacto radar en 119,1
1757	TWR/ACC	Recibido, ahora pasa el 027 a Palma, este primero está listo, lo puedo soltar ?
	ACC/TWR	Un momento; suelto. El de Palma dale 150 directo a SJ mantenga 2000 pies hasta contacto radar.

124.7 MHz

<i>Time</i>	<i>From</i>	<i>Message</i>
1758	BX 154	Barcelona BX 154 nivel 280 baliza a los 17.
	BX 154	Barcelona 154.
	BX 154	Barcelona BX 154.
	ACC ?
	BX 154	Barcelona hace 1 minuto y medio 230 de nivel la baliza de Palma a los 17.
	ACC ?
1759	BX 154	Recibido, librando ahora 23, notificará alcanzando 170 BX 154.
1800	PA/BL	Oye hace media hora que te estoy llamando.
	BL/PA	Si, si, es que tenía la clavija levantada, mea culpa. El IB 027 a los 23 para 150. A los 23 para 150, bien.
1801	ACC ?
	?	Afirmativo.
	ACC ?
	?	Librando ahora 21.
	ACC ?
1803		Recibido.
1804	IB 027	Barcelona IB 027
	ACC	??
	IB 027	027 abandonando 100 para 150.
	ACC	?
1805	IB 027	027
	ACC	PA Para tu información el BX 154 que te lo he pasado a 170, el que va detras, el 027 te lo he pasado a 150 en el radar, se lleva 30 millas de separación.
1806	IB 027	027 alcanzando 150.
	ACC	?
	IB 027	IB 027 buenas tardes.

124.7 MHz

124.7 MHz

<i>Time</i>	<i>From</i>	<i>Message</i>
1807	TWR	Autorización JA 807.
	ACC	JA 807 130 directo a SJ.
	TWR	Listo.
	ACC	Un momento; que mantenga.

119.1 MHz

<i>Time</i>	<i>From</i>	<i>Message</i>
1742	IB046	Barcelona 046 aproximandonos a 70 podemos continuar descenso?
	APP	Afirmativo, para 4000 pies QNH 1017 transicion 50.
	IB046	Recibido, para 4000 1017.
1743	IB046	046 pasando VNV ahora.
1744	IB046	Barcelona 046 manteniendo 4000.
	APP	046 recibido continúe para 3000 notifique (ilegible).
	IB046	Recibido.
	A0454	Barcelona A0454 buenas tardes.
	APP	454 Barcelona, buenas tardes.
	A0454	454 pasamos ADX a los 36 nivel de vuelo 60 estimando VNV 15.
	APP	15 VNV recibido, autorizado a VNV nivel 60 notifique radial 200 del VOR.
	A0454	Notificaré 200.
1745	IB046	Barcelona IB046 3000 con el campo a la vista.
	APP	Recibido autorizado a aproximación VMC a la pista 25 comuníqueme ahora TWR 118.1.
	IB046	Terminado.
1747	TWR/APP	IB046 asegurado.
	A0454	A0454 Barcelona podemos descender a 4000 pies.
	APP	454 afirmativo, autorizado a 4000 pies QNH 1017 transicion 50.
	A0454	1017 transicion 50 librando 60 para 4000 pies.
	IB026	Barcelona IB026 interceptando el radial 200 permiso descenso.
1748	APP	IB026 autorizado a 3000 pies y proceder al VOR via radial 200 QNH 1017 nivel de transicion 50.
	IB026	Me repite el nivel por favor.
	APP	3000 pies.

119.1 MHz

<i>Time</i>	<i>From</i>	<i>Message</i>
1749	IB026	De acuerdo autorizado a 3000 pies.
	APP/TWR	Estimadas GAPDN estima 1808. IB246 "car" de Alicante 1809z
1751	IB026	Barcelona IB026 estamos librando ahora 80, me da QNH?
	APP	026 repito el QNH 1017 transicion 50.
	IB026	Muchas gracias.
1752	APP	026 confirme campo a la vista.
	IB026ativo.
	APP	Entiendo afirmativo.
	IB026	Afirmativo.
	APP	Recibido nivel.
	IB026	Libre 60.
	APP	Recibido autorizado aproximación VMC a la pista 25, comuniqué TWR 118.1.
	IB026	Hasta luego.
1754	TWR/APP	IB026 asegurado.
1755	TWR/APP	Le van dos tráfico por la pista 20. Uno a Palma y primero a Ibiza y después a Palma, dos DC-9.
	APP/TWR	Cuanto tardarán en estar en el aire.
	TWR/APP	Cuatro minutos.
	APP/TWR	Vale, por mi vale.
1756	GDN	Barcelona APP GDN
	APP	DN turn left heading 140 present level.
	GDN	Left turn of 140 present level leaving 130.
	APP	13 roger.
	IB045	Barcelona IB045
	GDN	Estimating SBD at 07.
	APP	DN confirm estimating SBD at 07.

119.1 MHz

<i>Time</i>	<i>From</i>	<i>Message</i>
1757	GDN	Sorry at 05.
	APP	05 roger, then cancel my last transmission proceed heading to SBD.
	GDN	Roger.
	APP	045 contacto radar al despegue proceda según autorizado.
	IBO45	Barcelona 045 el último mensaje es para mi.
	APP	Afirmativo contacto radar al despegue proceda según autorizado.
	IB045	045.
	A0454	A0454 Barcelona manteniendo 4000 pies podemos bajar hasta 3000.
	APP	Negativo mantenga 4000 notifique radial 200.
1758	A0454	Manteniendo 4000 notificaré 200.
	APP	Confirme está procediendo rumbo a VNV.
	A0454	Afirmativo.
	APP	En qué radial está actualmente.
	A0454	Un momento.
	GDN	Barcelona APP DN out of 100 for 90.
	APP	DN roger, have you DME on board.
	GDN	Negative Sir.
	APP	Roger DN continue descending down 60.
	GDN	DN roger we are leaving 9 for 6.
1759	A0454	454 cruzando el radial 182.
	APP	DN turn now left, heading 140.
	GDN	DN left on to 140 leaving 85, for 6.
	APP	Roger.— Confirm passing SBD now DN.
	GDN	DN in about 30 seconds.
	APP	Roger.

119.1 MHz

<i>Time</i>	<i>From</i>	<i>Message</i>
1759	GDN	Barcelona DN passing SBD.
	APP	DN radar contact, continue descending down 2800 feet altimeter 1017 transition 50.
1800	GDN	Roger, sir, further down to 2800 feet on 1017 transition level 50.
	IB131	Barcelona 131 manteniendo 2000.
	APP	131 recibido continúe ascenso para 200.
	IB131	Para 200 IB131.
	GDN	Barcelona DN requesting duty runway.
	APP	Duty runway 25.
	GDN	Gracias.
	APP	045 VNV comunique Barcelona 127.7 terminado.
	APP	045 recibió.
	IB045	Negativo puede repetir.
	APP	VNV comunique Barcelona 127.7 terminado.
	IB045	127.7, buenas.
	IB246	Barcelona IB246 buenas tardes.
1801	APP	Buenas tardes adelante.
	IB246	De Alicante manteniendo 210 procedemos por el radial 220 del VOR de Barcelona estimo pasar a traves de RES en dos minutos solicitamos descenso.
	APP	246 recibido está autorizado a nivel 70.
	IB246	De acuerdo libre 210 para 70 246.
	IB027	IB027 manteniendo 2000 procedimiento según autorizado.
	APP	027 recibido. – 027 continúe ascenso para 150.
	IB027	Libre 2000 para 150, 027.
	APP	131 nivel.
	IB131	Librando 50.
	APP	Libre 50 recibido.
	A0454	454 Barcelona aproximándonos radial 200 procedemos – por él.

119.1 MHz

<i>Time</i>	<i>From</i>	<i>Message</i>
1802	APP	454 recibido autorizado proceder via radial 200.
	A0454	Procediendo radial 200 requiero mas descenso si es posible.
	APP	Mantenga 4000 pies le avisaré.
	A0454	Recibido.
	APP	DN altitud.
	GDN	DN is passing 4000 feet on 1017.
	APP	You are leaving 4000 roger.
1804	APP	DN confirm you are maintaining heading.
	APP	DN Barcelona.
	APP	DN Barcelona.
	APP	GAPDN Barcelona.
	APP	027 nivel.
	IB027	Abandonando 100 027.
1805	APP	Recibido 23 millas fuera comuniqué Barcelona 124.7 terminado.
	IB027	124.7 buenas tardes.
	APP	131 Barcelona nivel.
	IB131	Abandonando 110.
	APP	Recibido 35 millas fuera comuniqué Barcelona en 127.7
	IB131	127.7 buenas tardes terminado.
	APP	GAPDN Barcelona.
	APP/TWR	El DN como está.
	TWR/APP	Aqui no está.
1806	APP	GAPDN GAPDN Barcelona.
	APP	GAPDN Barcelona.
	APP	GAPDN Barcelona.
	APP/TWR	Hazle una llamada a ver si por casualidad está.
	TWR/APP	Ya lo hemos hecho y no contesta. De todos modos vamos a repetir.
	APP	GAPDN Barcelona.