

Standard Aircraft Characteristics

NAVY MODEL

A-1E

AIRCRAFT

(AD-5)

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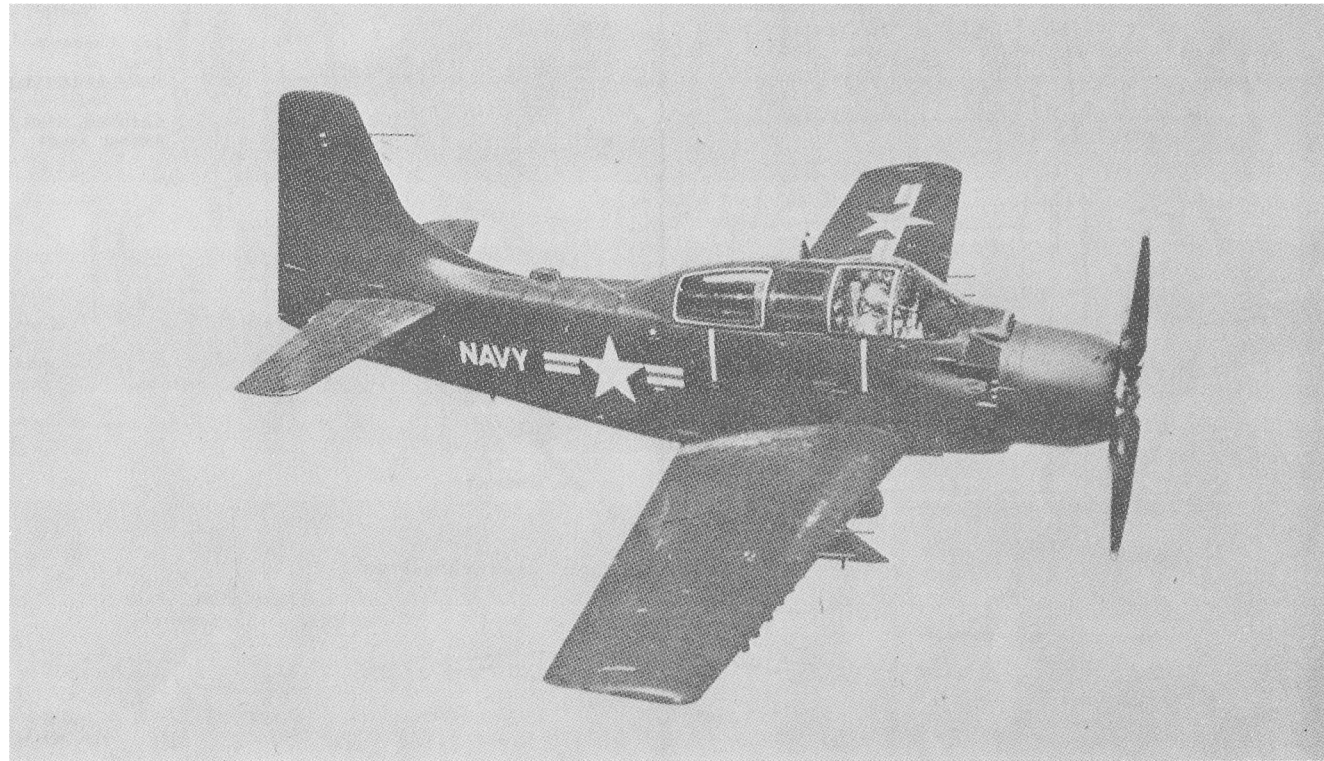
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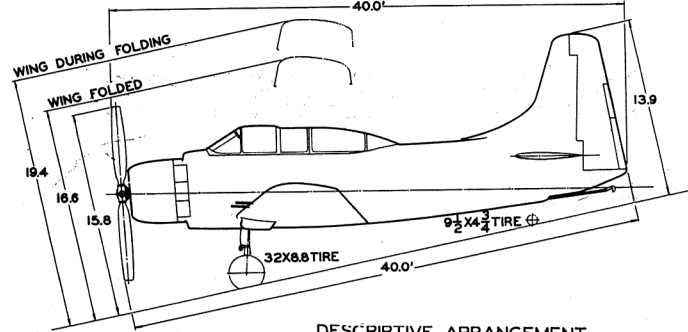
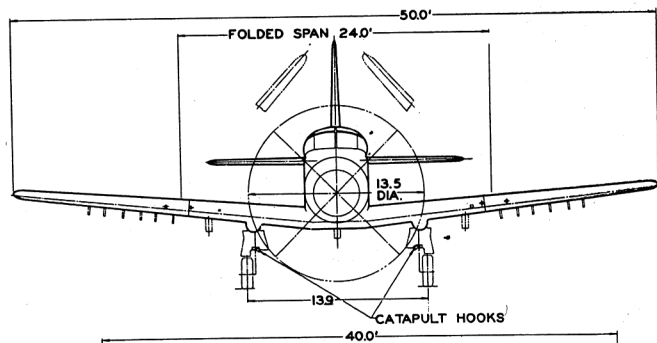
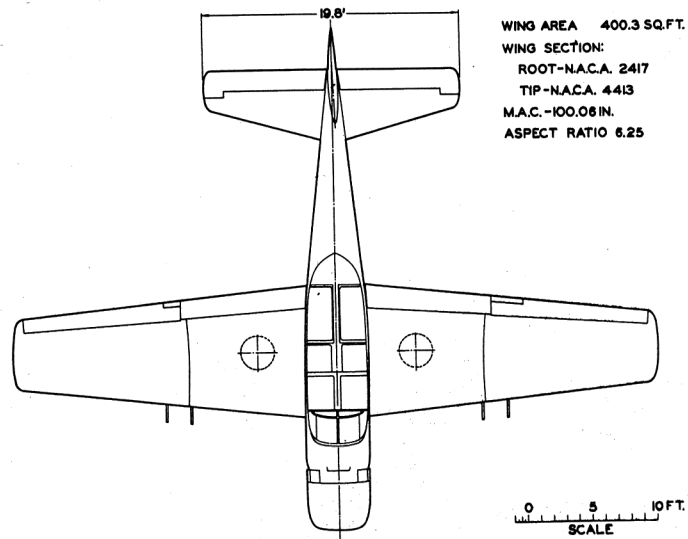
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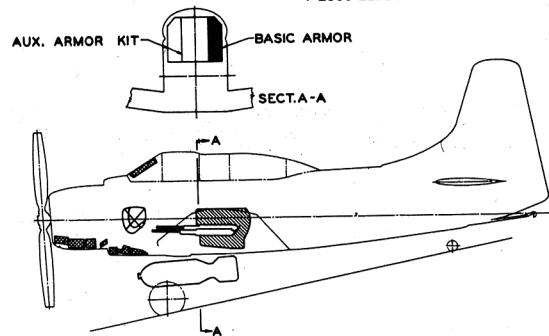
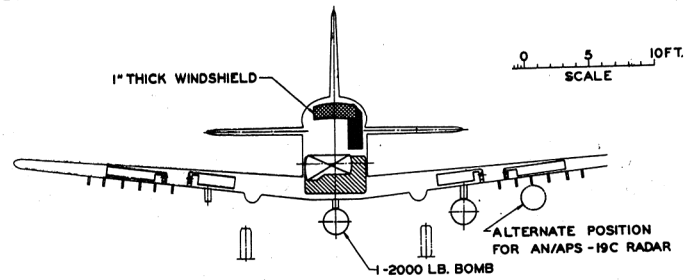
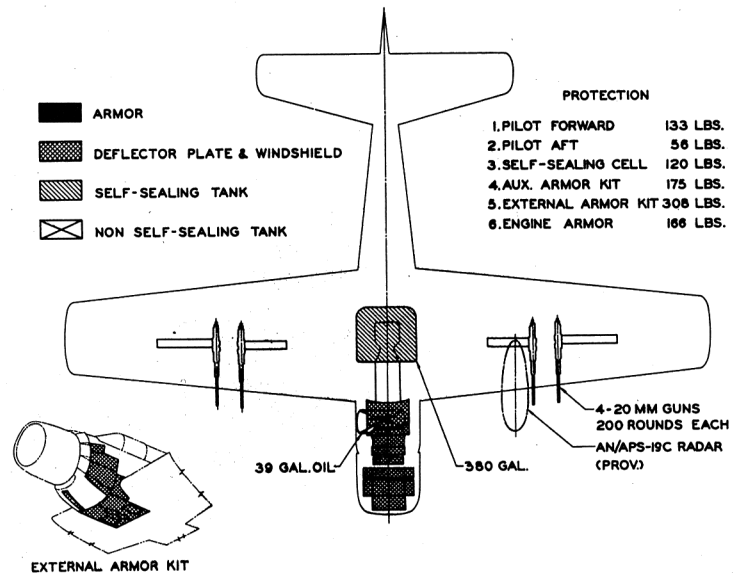


STANDARD AIRCRAFT CHARACTERISTICS
A-1E SKYRAIDER

SERVICE



DESCRIPTIVE ARRANGEMENT



ARMAMENT & TANKAGE

POWER PLANT

NO. & MODEL.....(1) R-3350-26-WA
 MFR.....Wright Aero
 SUPERCHG.....Single Stage Two Speed
 REDUCT.GEAR RATIO......4375:1
 PROP. MFR.....Aero Products
 BLADE DES. NO.....M20A2-162-0
 NO. BLD./DIA.....4/13'6"

RATINGS

	BHP	@ RPM	@ ALT
T.O.	2,700	2,900	S.L.
MIL.	2,700	2,900	3,700
	2,100	2,600	4,500
NORM.	2,300	2,600	6,200
	1,900	2,600	17,000

Spec. No.....N836-D

ORDNANCE

Maximum Bomb Load.....8,000 lbs.
 Centerline (1-Aero 3A Ejector)
 Bombs 1-2000 lb. 1-500 lb.
 1-1600 lb. 1-250 lb.
 1-1000 lb. 1-100 lb.
 Depth Bomb 1-350 lb.
 Mines 1-2000 lb. 1-500 lb.
 1-1000 lb.
 Torpedoes 0ns
 Frag. Clust. 1-500 lb. 1-100 lb.
 Incend. Cl. 1-500 lb. 1-100 lb.
 Chem. Tanks 1-Aero 4A
 Fuel Tanks 1-300 gal. 1-150 gal.
 Prac. Bombs 1-Aero 4A Container
 (Mk.47 Rack) 1-Aero 5A Container
 Misc. Stores 1-Mk. 7 1-Mk. 91
 1-Mk. 8 1-BOAR
 1-Mk. 12 1-Mk. 90
 1-APS-16 Radar Store
 1-Aero 2A Sono/fl. disp.
 Inner Wing (2-Mk. 51 Bomb Racks)
 Bombs 2-2000 lb. 2-500 lb.
 2-1600 lb. 2-250 lb.
 2-1000 lb. 2-100 lb.
 Depth Bomb 2-350 lb.
 Mines 2-2000 lb. 2-500 lb.
 2-1000 lb.

(Continued on NOTES page)

MISSION AND DESCRIPTION

The principal mission of the AD-5 is that of general purpose attack and ground support. It is also a torpedo, mine layer or scout airplane capable of operating from all classes of carriers or from land bases. The AD-5 is a development of the AD series and incorporates side by side seating for an assistant pilot. The revised crew arrangement facilitates all-weather operation and permits utilization for long range navigation, radar search, spotting and observation, air support coordination, instrument training, pilot familiarization and other operations requiring a second crew member. Controls, armament, and tactical equipment are located for single pilot operation. A single dive brake is provided for dive bombing and maneuvering control.

The AD-5 can be converted rapidly aboard a carrier for operation as a passenger, cargo, ambulance or long range airplane by installation of appropriate conversion kits supplied as alternate equipment.

DEVELOPMENT

First Flight.....August 1951
 Service Use.....April 1953

WEIGHTS

LOADINGS	LBS.	L.F.
EMPTY.....	12,293.....	
BASIC.....	14,309.....	
DESIGN.....	17,000.....	6.4
COMBAT.....	16,760.....	6.5
MAX.TO (FIELD).....	25,000.....	
(CAT.).....	25,000.....	
MAX.LDG (FIELD).....	21,000.....	
(ARREST).....	17,500.....	

ALL WEIGHTS ARE CALCULATED.

FUEL AND OIL

GALS.	NO.TANKS	LOCATION
380*.....	1.....	Fuselage
150 or 300.....	1.....	Ctr. Drop
150 or 300.....	2.....	Wing Drop
Fuel Grade.....	115/145	
Fuel Spec.....	MIL-F-5572	

*Self Sealing Tank
 Max. Usable Fuel 980 gal. (limited by oil cap.)

OIL

CAPACITY.....39 gals.
 SPEC.....AN-O-8
 GRADE.....1120

DIMENSIONS

WING	
AREA.....	400.3 sq.ft.
SPAN.....	50 ft.
MAC.....	8.4 ft.
LENGTH.....	40.0 ft.
HEIGHT.....	15.8 ft.
TREAD.....	13.9 ft.
PROP. GRD. CLEARANCE.....	6 in.

ELECTRONICS

UHF COMM.....AN/ARC-27A
 UHF DIR. FINDER.....AN/ARA-25
 RADIO ALTIMETER.....AN/APN-22
 NAV RECEIVER.....AN/ARR-2A
 MARKER BEACON.....AN/ARN-12
 LF ADF.....AN/ARN-6
 IFF.....AN/APX-6
 SEARCH RADAR.....AN/APS-19C
 INTERPHONE.....AN/AIC-4
 TACAN.....AN/ARN-2
 (Alternate to AN/ARN-6)

PERFORMANCE SUMMARY

TAKE-OFF LOADING CONDITION	(1) ATTACK 1-2000 lb. Bomb		(3) ATTACK 1-2000 lb. Bomb 2-150 gal. Tanks 12-5" HVAR	
	TAKE-OFF WEIGHT	lb.	19,672	
Fuel	lb.	2,280		4,080
Fayload	lb.	2,000		3,680
Wing loading	lb./sq.ft.	49.2		58.4
Stall speed - power-off	kn.	87.8		95.7
Take-off run at S.L. - calm	ft.	1,070		1,660
Take-off run at S.L. 25 kn. wind	ft.	535		880
Take-off to clear 50 ft. - calm	ft.	1,820		2,870
Max. speed/altitude	(A) kn./ft.	271/17,400		246/7,500
Rate of climb at S.L.	(A) fpm.	1,840		1,240
Time: S.L. to 10,000 ft.	(A) min.	5.7		9.0
Time: S.L. to 20,000 ft.	(A) min.	14.1		25.3
Service ceiling (100 fpm)	(A) ft.	26,400		21,200
Combat range	n.mi.	655		1,045
Average cruising speed	kn.	170		170
Cruising altitude(s)	ft.	5,000		5,000
Combat radius	n.mi.	235		510
Average cruising speed	kn.	170		170
Mission time	hrs.	3.1		6.4
COMBAT LOADING CONDITION				
(2) CLEAN 60% Fuel				
COMBAT WEIGHT	lb.	16,760		
Engine power		Military		
Fuel	lb.	1,368		
Combat speed/combat altitude	(B) kn./ft.	269/Sea Level		
Rate of climb/combat altitude	(B) fpm/ft.	2,990/Sea Level		
Combat ceiling (500 fpm)	ft.	26,800		
Rate of climb at S.L.	fpm.	2,990		
Max. speed at S.L.	kn.	269		
Max. speed/altitude	kn./ft.	286/15,200		
LANDING WEIGHT				
Fuel	lb.	218		
Stall speed - power-off	kn.	78.2		
Stall speed - with approach power	kn.	73.6		

NOTES

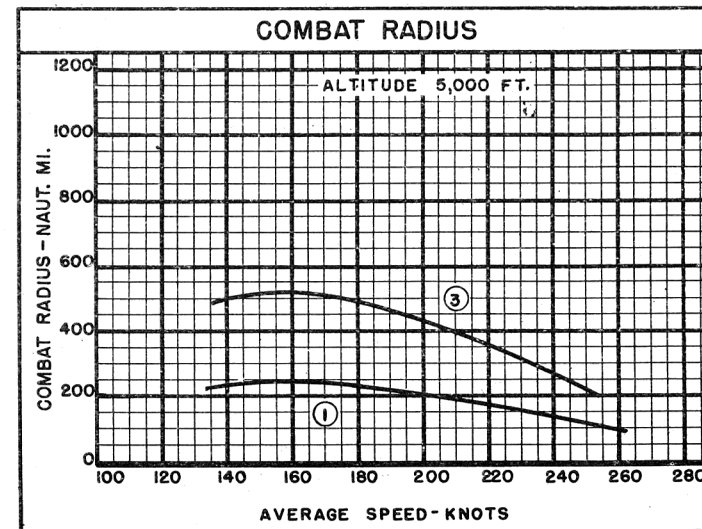
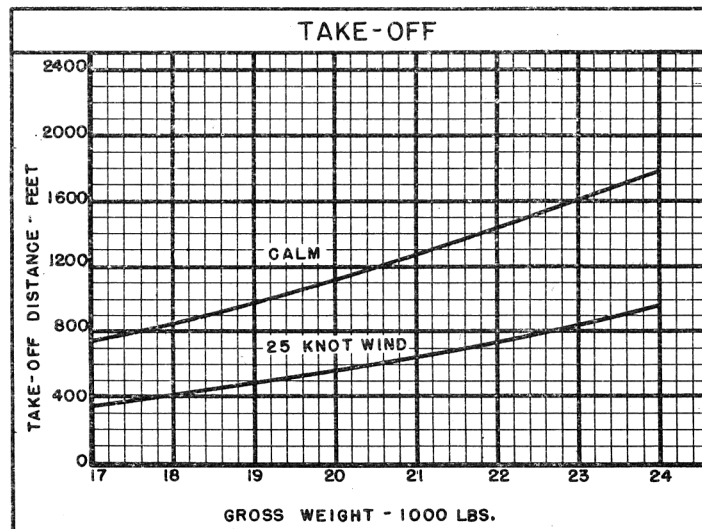
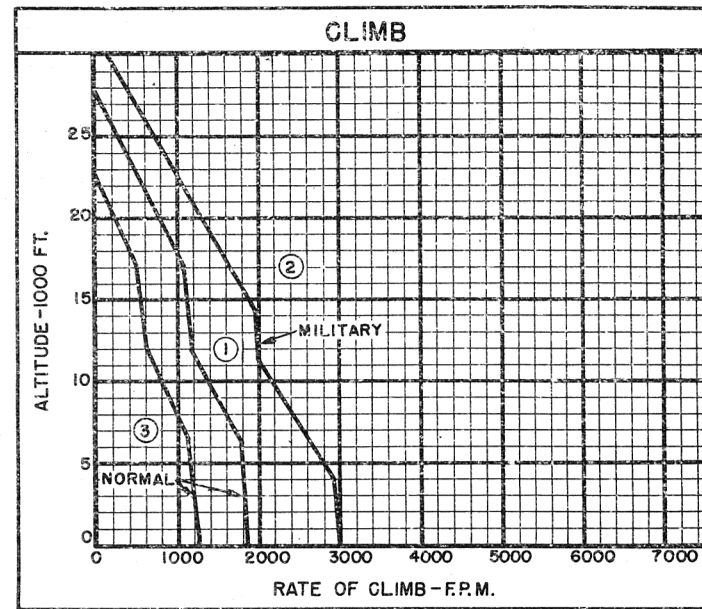
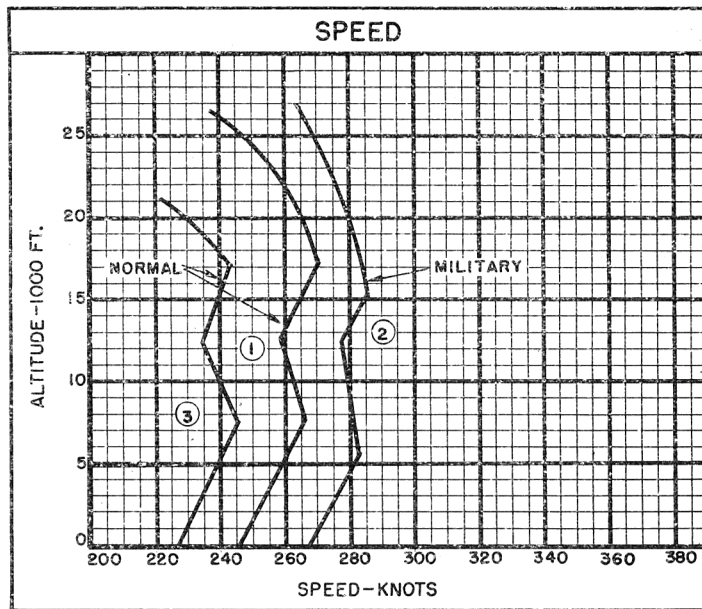
(A) Normal rated power.

(B) Maximum speed and rate of climb at sea level are 283 knots and 3,670 fpm, respectively, with combat power (3150 BHP). Installation of water injection system, including 12½ gal. ADI fluid, increases airplane weight by 136 lbs.

PERFORMANCE BASIS: Performance is calculated and based on contractor's flight tests of models AD-4B, AD-5, and AD-6.

COMBAT RANGE AND RADIUS are based on fuel consumption data from AD-4B, AD-5 and AD-6 flight tests increased by 5%.

All loadings include centerline and two inner wing racks, 12 Aero 14 racks, external armor plate, and four 20mm guns.



○ LOADING CONDITION COLUMN NUMBER

NOTES

SPOTTING: A total of 83 airplanes can be accommodated in a landing spot on the flight and hangar decks of a CVA-19 Class Angled Deck Carrier.

----- LOW ALTITUDE ATTACK COMBAT RADIUS PROBLEM (RECIPROCATING ENGINE) -----

WARM-UP, TAXI, TAKE-OFF: 10 minutes at normal power.

CLIMB: On course to 5,000 feet with normal power.

CRUISE-OUT: At 5,000 feet at velocity for long range. (If external fuel tanks are carried drop when empty.)

DESCEND: To sea level. (No fuel used - no distance gained.)

DROP BOMBS, FIRE ROCKETS.

COMBAT: 15 minutes at sea level. (5 minutes at military power and 10 minutes at normal power)

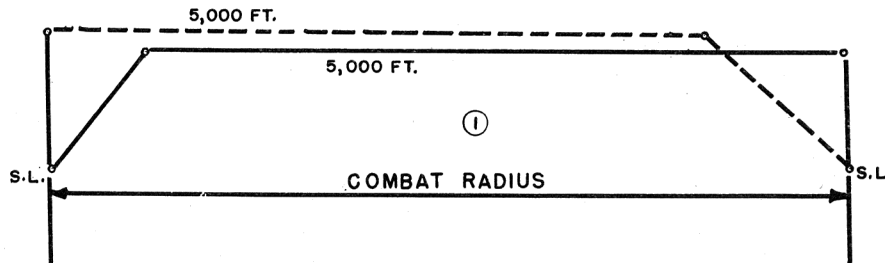
CLIMB: On course to 5,000 feet with normal power.

CRUISE-BACK: At 5,000 feet at velocity for long range.

RESERVE: 20 minutes at velocity for long range at sea level plus 5% of initial fuel load.

$$\text{COMBAT RADIUS} = \text{CLIMB} \neq \text{CRUISE-OUT} = \text{CLIMB} \neq \text{CRUISE-BACK}$$

$$\text{MISSION TIME} = \text{TIME REQUIRED FOR CLIMB} \neq \text{CRUISE-OUT} \neq \text{COMBAT} \neq \text{CLIMB} \neq \text{CRUISE-BACK}$$



ORDNANCE (Continued)

Torpedoes	Two		Outer Wing (12-Aero 14 Racks)	
Frag. Cl.	2-500 lb.	2-100 lb.	Bombs	6-500 lb. 12-100 lb.
Incend. Cl.	2-500 lb.	2-100 lb.	Depth Bombs	12-350 lb.
Chem. Tanks	2-Aero 14A		Frag. Bombs	6-500 lb. 12-100 lb.
Fuel Tanks	2-300 gal.	2-150 gal.	Incend. Cl.	6-500 lb. 12-100 lb.
Prac. Bombs	2-Aero 4A Container		Rockets	12-HPAG 5 in.
	2-Aero 5A Container			12-HVAR 5 in.
Rockets	2-11.75 in.			12-Aero 3A Packages
Misc. Stores	2-Aero 2A Sono/fl. disp.			FIXED GUNS/RDS. AMM.
	1-APS-31B Radar Store			4-20mm type M3/200 rds. per gun
	1-MX-900A Window Disp.			Mounted in wing leading edge
	1-Sono/Searchlight			Arm. Cont. Syst. (LABS) Aero 18C
	1-APS-19 Radar Store			
	2-Para. flare Cont.			

○ LOADING CONDITION COLUMN NUMBER