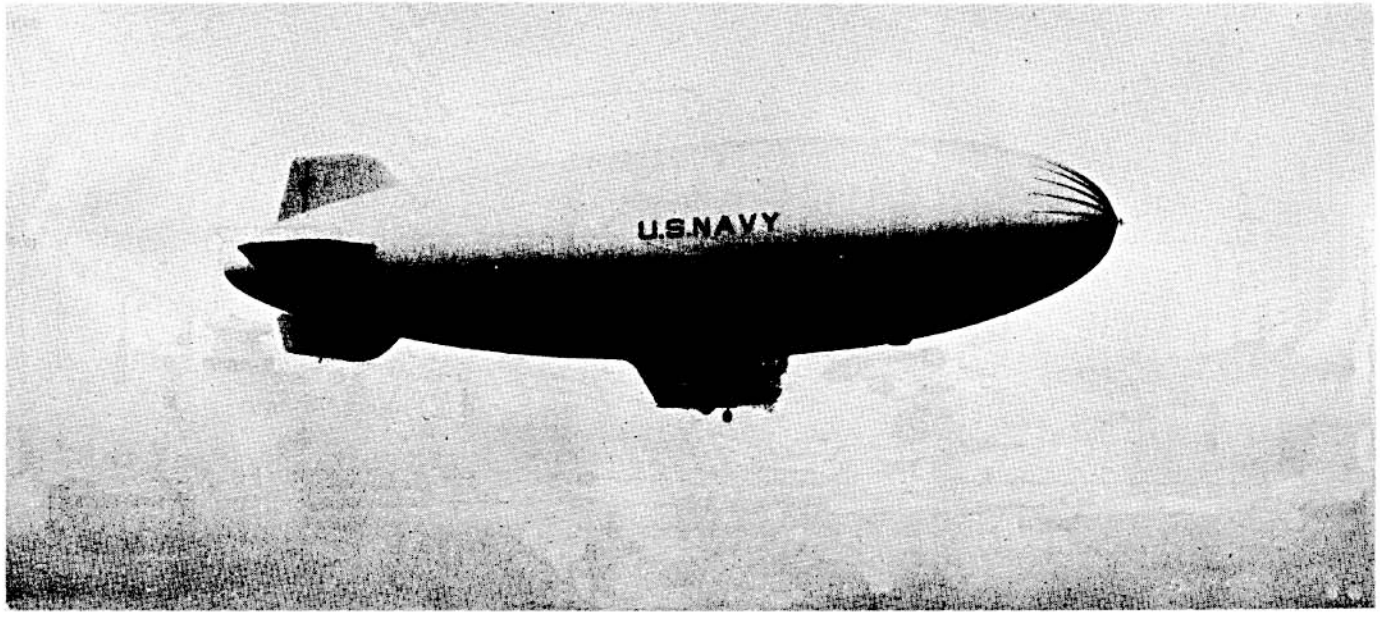
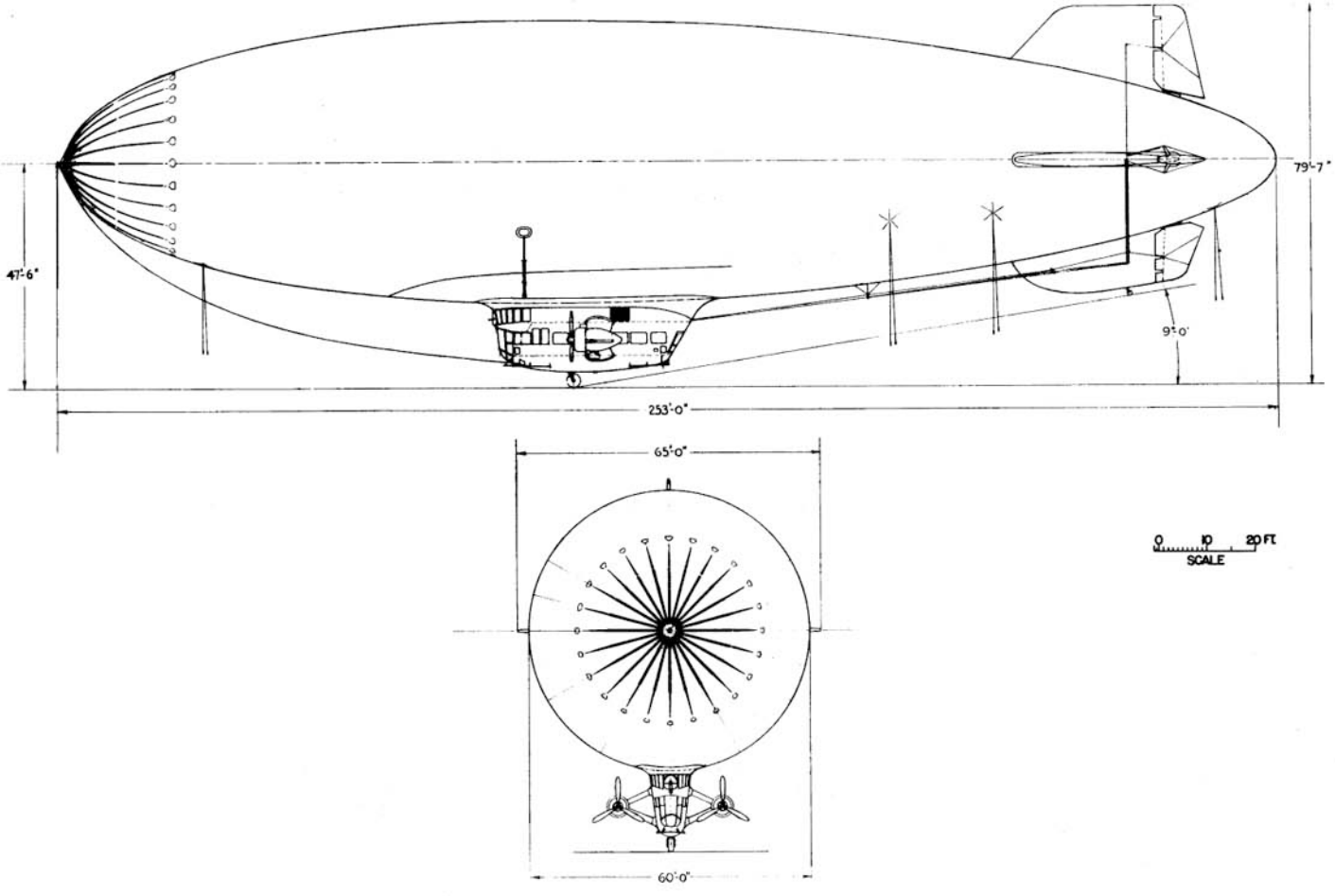


STANDARD AIRCRAFT CHARACTERISTICS

ZPK

BUREAU OF AERONAUTICS
NAVY DEPARTMENT

ENVELOPE VOLUME	456,000 CU. FT.
FINENESS RATIO	4.17
BALLONET VOLUME	119,500 CU. FT.
NUMBER OF BALLONETS	2
HORIZONTAL EMPENNAGE	992 SQ. FT.
VERTICAL EMPENNAGE	815 SQ. FT.



DESCRIPTIVE ARRANGEMENT

MISSION AND DESCRIPTION

The mission of the ZPM airship is patrol and anti-submarine warfare, especially patrol and convoy escort in coastal waters, and utility.

Electronic equipment includes radar and MAD for detecting and tracking submarines. The armament comprises bombs and/or depth charges carried within the car, and one machine gun as an anti-personnel weapon.

The car is of exceptional length for distribution of the load along the envelope. There are four ballonets instead of the usual two. The normal complement is ten.

WEIGHTS

Loadings	Lbs.
EMPTY	30,800
STAT. LIFT*	43,600
STAT. + MAX. DYN LIFT	46,100

* 97% inflated at .062 lb/cu. ft.

All weights are actual.

POWER PLANT

NO. & MODEL....(2) R-1340-AN-2
MFR .....P.&W.
SUPERCH.....1 stage, 1 speed
PROP. GEAR RATIO.....0.666
PROP. MFR.....Curtiss
PROP. DES. NO.....714-1C2-12
NO. BL./DIA.....3/12'-0"

RATINGS

	Bhp	@ RPM @	Alt.
T.O.	600	2250	SL.
NORM.	550	2200	5000'

SPEC. AN-1051

FUEL AND OIL

GAL.	NO. TANKS	LOCATION
1000	8	CAR
500	4	CAR,SLIP
500	4	CAR,DUMP

FUEL GRADE.....91/98
FUEL SPEC.....AN-F-48

OIL

CAPACITY (GALS).....108
SPEC.....AN-C-8
GRADE.....1120

ORDNANCE

GUNS

No.	Size	Location	Rds.
1	.50 cal	Fwd in car	240

BOMBS

Type	Size	Location	No.
D.B.	325#	In car	8

Max. bomb load.....2600 Lbs.

DIMENSIONS

GAS VOLUME.....725,000 cu. ft
BALLONETS.....203,000 cu. ft
LENGTH.....310'-0"
HEIGHT .....91'-0"
WIDTH.....72'-6"
MAX. DIA.....68'-4"

ELECTRONICS

Transmitter.....AN/ART-13
HF Trans. .....ATB
LF-MF-HF Rec.....ARB
Marker Bearcon AN/ARN-8
VHF Homing.....AN/ARR-1
VHF Transceiver....AN/ARC-1
Altimeter.....AN/APN-1
Search Radar.....AN/APS-2A
IFF.....AN/APX-2
Magnetic Detect...AN/ASQ-2C

PERFORMANCE SUMMARY

LOADING CONDITION		(1) ASW PATROL	(2) ASW PATROL	(3) FERRY	(4) HIGH ALTITUDE
TAKE-OFF WEIGHT	Lbs.	43,500	47,000	47,000	36,700
HEAVINESS	Lbs.	0	3,500	3,500	3,500
BOMBS	Lbs.	2,600	2,600		
SERVICE LOAD	Lbs.	3,100	3,100	3,100	2,500
FUEL & OIL	Lbs.	7,100	10,600	13,200	3,500
MAX. SPEED	Kts.	67.5	67.5	67.5	67.5
PRESSURE HEIGHT	ft.	1,000	1,000	1,000	9,900
TIME TO PRESS. HT.	min.	.8	1.2	1.2	14.0
TAKE-OFF RUN, CALM	ft.	0	1,350	1,350	1,350
PATROL RANGE/SPEED	N.mi./kts.	1420/50	2120/50	2640/50	875/50
PATROL RADIUS/SPEED	N.mi./kts.	570/50	850/50		350/50
ENDURANCE/SPEED	Hrs/kts.	74/35	110/35	138/35	37/35

NOTES

Performance is based on flight tests of airship XZPM-1.

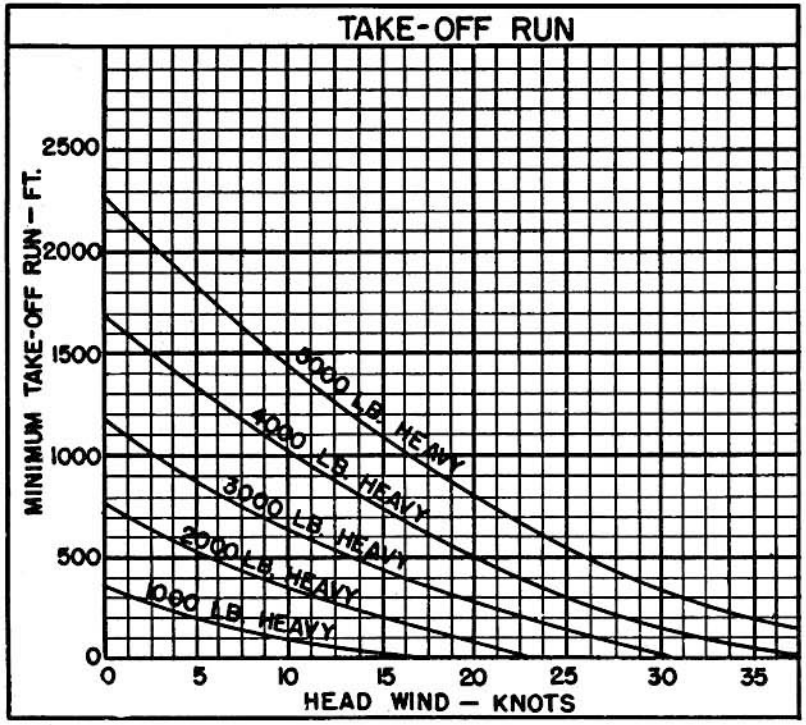
Range, radius and endurance are based on flight test fuel consumption increased by 5%.

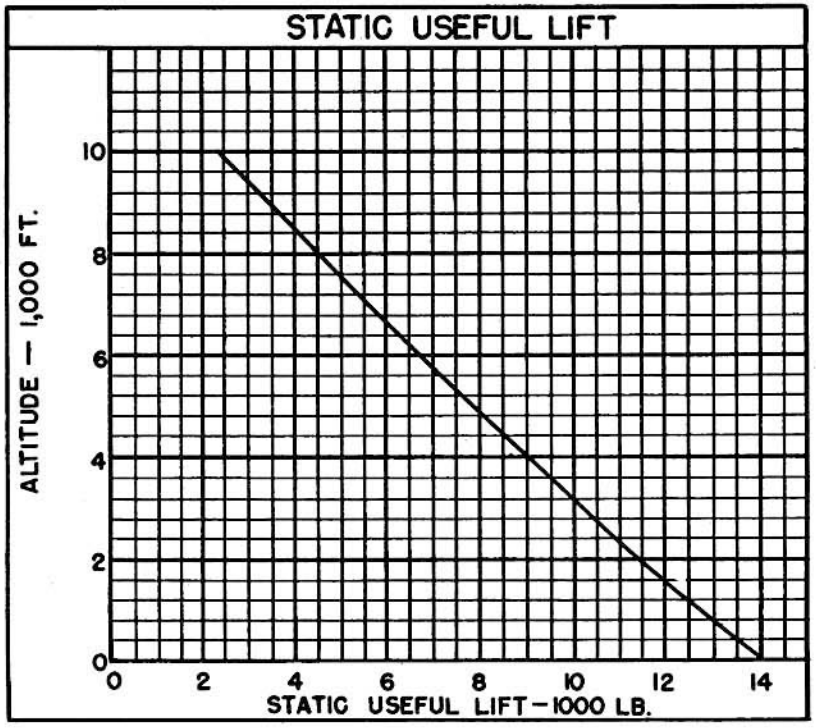
Patrol radius is 40% of patrol range.

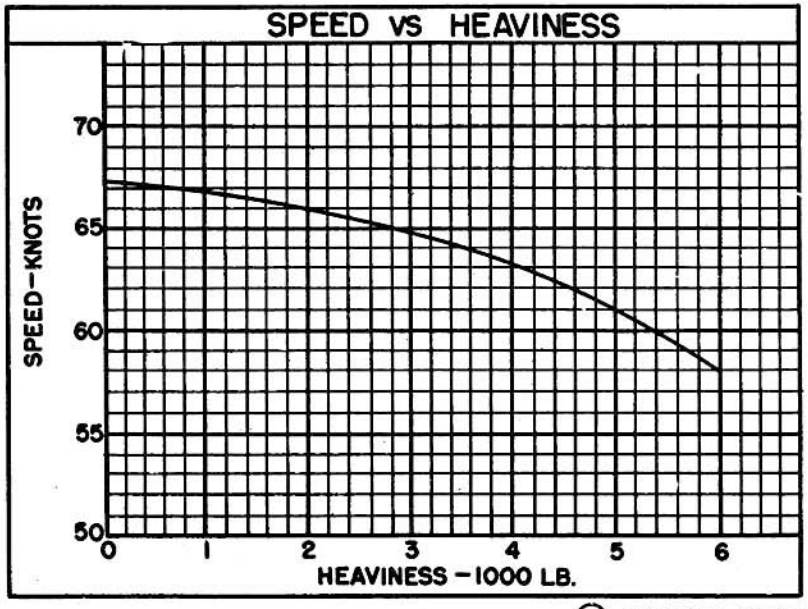
Performance is based upon inflation with helium, lifting .062 lb/cu.ft. at sea level.

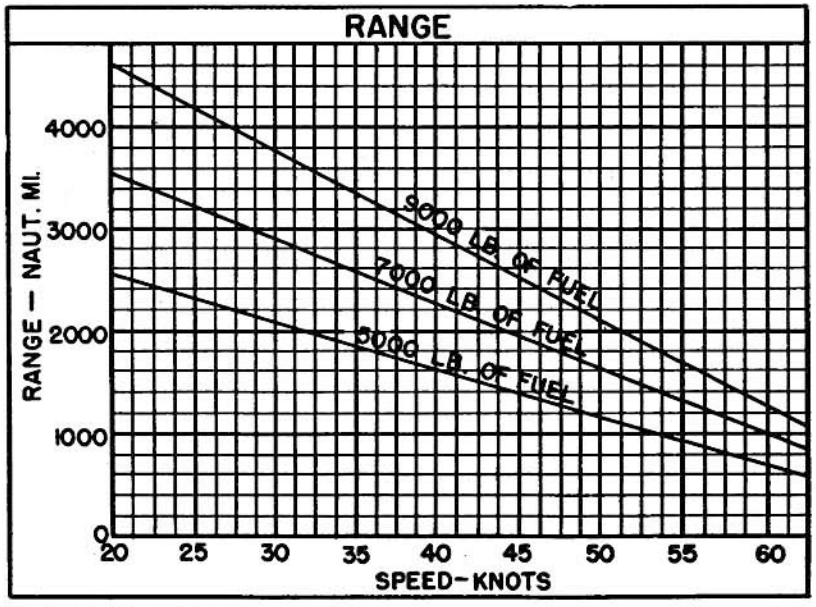
Fullness at sea level is 97.1% for 1000 ft. pressure height, and 74.1% for 9900 ft.

Pressure height is defined as the maximum altitude to which the airship can rise in a standard atmosphere, in a given loading condition, without valving helium.









○ LOADING CONDITION COLUMN NUMBER

NOTES

All figures for lift of the airship are based upon inflation with helium lifting .062 lb. per cu. ft. at sea level in the standard N.A.C.A. atmosphere.

The static lift in flight is independent of altitude and temperature so long as helium is not valved and there is no superheat (i.e. the air and gas are at equal temperatures).

The gross and useful lifts of the fully inflated airship diminish with altitude in the standard atmosphere at the rate of approximately 3% of the gross lift per 1000 feet.

In the absence of superheat the lift of the fully inflated airship at a given altitude varies inversely as the air temperature at the rate of approximately 1% of the gross lift per 5° F.

In all conditions of inflation, so long as gas is not valved, the lift varies directly with the superheat at approximately 1% per 5° F. The lift of the fully inflated airship is not, however, increased by rising gas temperature unless the altitude is reduced as necessary to avoid loss of gas by valving.