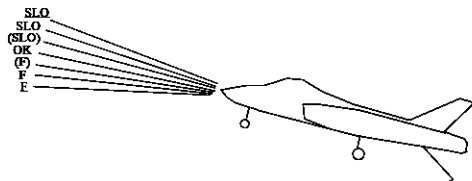


LSO's specify angle of attack in terms of the equivalent airspeed deviation. High angle of attack is considered to be slow (SLO), low angle of attack is fast (F), and on-speed is (OK). Gradations of fast and slow are illustrated in Figure 2-4.¹⁹

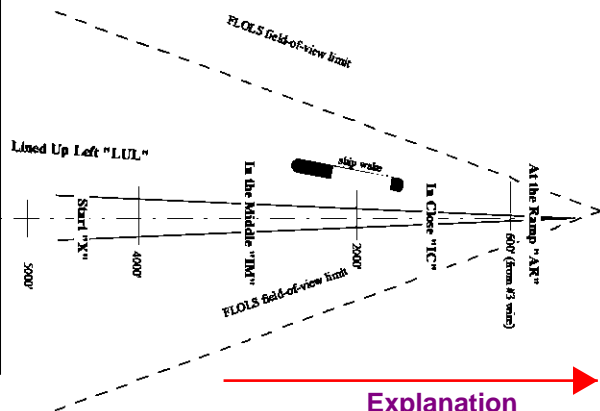


¹⁸ Numerical definitions of angle-of-attack status is generally specified for each aircraft in its respective NATOPS Manual.

OUTER-LOOP CONTROL FACTORS FOR CARRIER AIRCRAFT

http://robertheffleyengineering.com/docs/CV_envron/RHE_NAV_90_TR_1.pdf

A set of specific values for the above descriptors is given in Table 2-1 based on the study of LSO procedures reported in Reference 45. In addition to the position states, rate-of-change states are also listed, i. e., sink rate and drift rate.^{2b}



FLOLS
cells

Deck Centerline

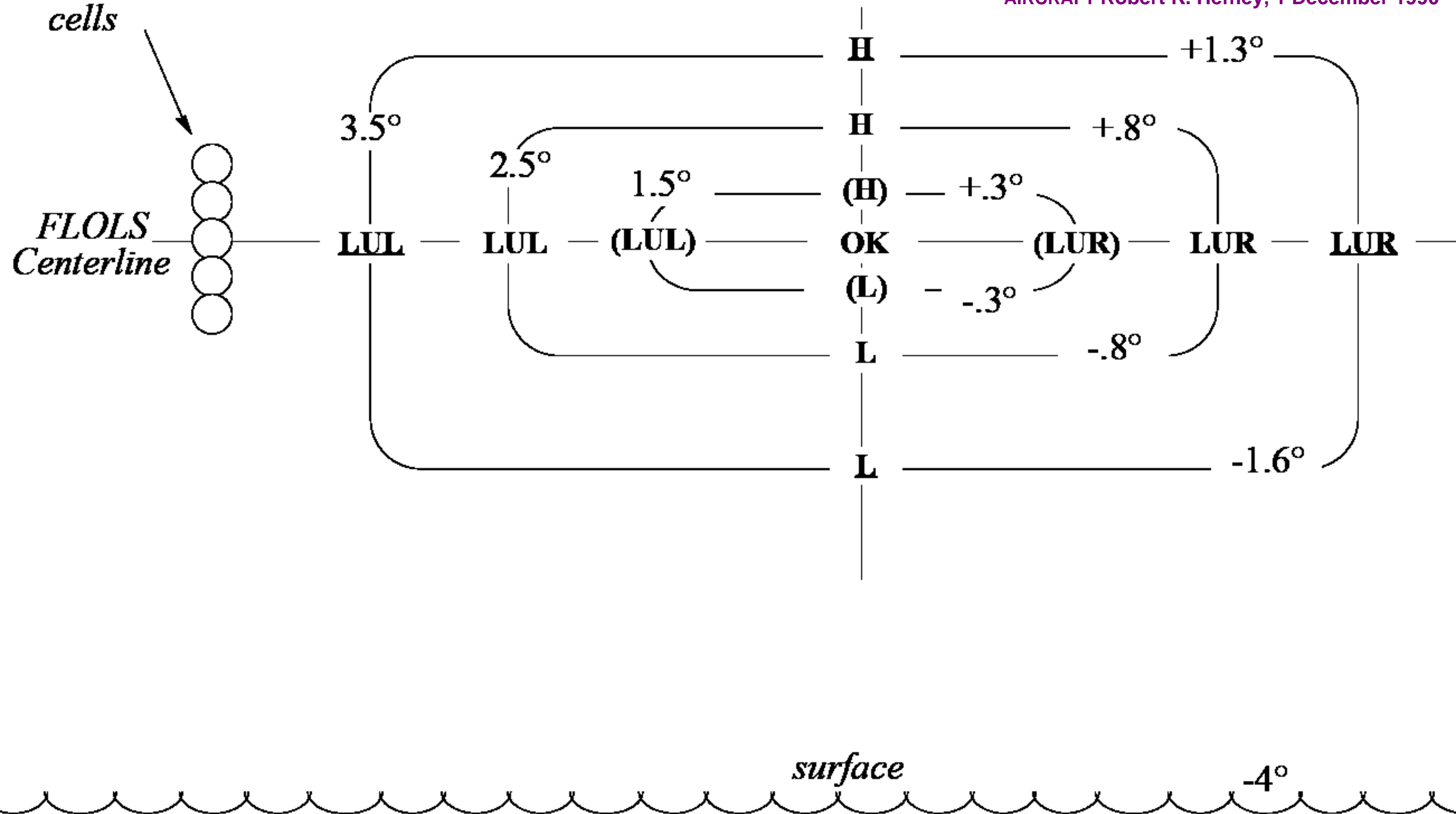


Figure 2-6. Scale Drawing of Approach Flightpath Parameters. **EXPLANATION** 

Table 2-1. LSO-Based Performance Parameters

Primary States (position, speed) **OUTER-LOOP CONTROL FACTORS FOR CARRIER AIRCRAFT**
Robert K. Heffley, 1 December 1990

Range:

verbal description	symbol	value
at the ramp	AR	100-600 ft from touchdown
in close	IC	600-2000 ft from touchdown
in the middle	IM	2000-4000 ft from touchdown
at the start	X	4000-5000 ft (~3/4 nm —beginning final leg)

Glideslope position:

verbal description	symbol	value	meaning
very high	H	1.3°	well above FLOLS beam (~4 balls high)
high	H	0.8°	at upper visible limit of FLOLS beam
a little high	(H)	0.3°	in center of "one-ball-high" FLOLS indication
OK	OK	0	in center of "on-glideslope" FLOLS indication
a little low	(LO)	-0.3°	in center of "one-ball-low" FLOLS indication
low	LO	-0.8°	at lower visible limit of FLOLS beam
very low	LQ	-1.6°	well below FLOLS beam (~5 balls low)

Angle of Attack (Speed):

verbal description	symbol	value	meaning
very slow	<u>SLO</u>	+3 units	nose-down chevron (green)
slow	SLO	+2 units	nose-down chevron (green)
a little slow	(SLO)	+1 units	donut + nose-down chevron (green)
OK	OK	0	donut, on-speed AOA
a little fast	(F)	-1 unit	donut + nose-up chevron (red)
fast	F	-2 units	nose-up chevron (red)
very fast	E	-3 units	nose-up chevron (red)

Lineup Position:

verbal description	symbol	value	meaning
lined up very far rt	<u>LUR</u>	3.5°	right of deck centerline
lined up right	LUR	2.5°	right of deck centerline
lined up a little right	(LUR)	1.5°	right of deck centerline
OK	OK	0	on deck centerline
lined up a little left	(LUL)	1.5°	left of deck centerline
lined up left	LUL	2.5°	left of deck centerline
lined up very far left	<u>LUL</u>	3.5°	left of deck centerline

Secondary States (rate of change of position)

Sink Rate:

verbal description	symbol	value	meaning
not enough R/D	NERD!	0.8 °/sec	approx level flight @ 1000' range
not enough R/D	NERD	0.4 °/sec	approx level flight @ 2000' range
not enough R/D	NERD	0.2 °/sec	approx level flight @ 4000' range
not enough R/D	(NERD)	0.1 °/sec	
OK	OK	0	descending on GS
too much R/D	(TMRD)	-.1 °/sec	
too much R/D	TMRD	-.2 °/sec	
too much R/D	<u>TMRD</u>	-.4 °/sec	

Drift Rate:

verbal description	symbol	value	meaning
very fast right drift	<u>DR</u>	1.0 °/sec	~10° heading error at 1/4 nm
right drift	DR	0.5 °/sec	~5° heading error at 1/4 nm
a little right drift	(DR)	0.2 °/sec	~2° heading error at 1/4 nm
OK	OK	0	
a little left drift	(DL)		
left drift	DL		
very fast right drift	<u>DL</u>		