

DAILY/INITIAL FLIGHT TEST REPORT

1. AIRCRAFT TYPE

OV-1B

2. SERIAL NUMBER

592637

3. CONDITIONS RELATIVE TO TEST

A. PROJECT/MISSION NO	B. FLIGHT NO/DATA POINTS	C. DATE
D. FRONT COCKPIT (Left Seat) BASS	E. FUEL LOAD 1800 #	29 JULY 88
G. REAR COCKPIT (Right Seat) MAJ E. MITCHELL U.S.A.	H. START UP GR WT/CG	F. JON TESTER 35
J. TO TIME/SORTIE TIME 0900 / 1.3	K. CONFIGURATION/LOADING CLEAN	I. WEATHER 2 M: Haze
M. CHASE ACFT/SERIAL NO	N. CHASE CREW	L. SURFACE CONDITIONS 78°F winds L+V
		O. CHASE TO TIME/SORTIE TIME

4. PURPOSE OF FLIGHT/TEST POINTS

QUALITATIVE EVALUATION OF AIRCRAFT FOR MILITARY INTELLIGENCE MISSION. (SIDE LOOKING RADAR SURVEILLANCE, ELECTRONIC INTELLIGENCE GATHERING)

5. RESULTS OF TESTS (Continue on reverse if needed)

OVERALL: AIRCRAFT IS NOT SUITED FOR ITS MISSION EXCEPT WHERE GROUND TO AIR AND AIR TO AIR THREATS ARE NOT A FACTOR. A/C SPEED RANGE 100 - 350 KTS (340 VNE) IS NOT TACTICALLY SURVIVABLE. MAJOR PROBLEM WITH A/C OTHERWISE IS ITS HAZARDOUS FLIGHT CHARACTERISTICS ON ONE ENGINE. LOSS OF ONE ENGINE RIGHT AFTER TAKEOFF REQUIRES QUICK ACTION BY PILOT TO EVEN MAINTAIN INSIDE THE EJECTION ENVELOPE AND BETWEEN GEAR RETRACTION AND VSE (125KTS) WILL USUALLY RESULT IN LOSS OF AIRCRAFT UNDER OPERATIONAL LOADING UNLESS RUNWAY IS LONG. A/C CAN OPERATE FROM RUNWAYS AS SMALL AS 2000 FT, AND CAN LAND IN LESS THAN 1000 FT. AIRCRAFT IS DIFFICULT TO OPERATE IMC DUE TO LESS ACCURATE ALTITUDE GYRO AND P-FACTOR, AND AIRCRAFT DYNAMIC MODE EXCITATION WITH PITCH CHANGES. HDG MUST BE CONSTANTLY CHECKED AND CORRECTED.

COCKPIT: LACK OF AIR COND. AND GREENHOUSE COCKPIT WAS VERY UNCOMFORTABLE. FIELD OF VIEW RESTRICTED BY OVERHEAD CONSOLE AND SIDE BY SIDE SEATING. COULD ONLY SEE BACK TO WING TIP ON MY SIDE OF A/C. ENTRY IS AWKWARD AND STORAGE FOR PUBS ETC IS LIMITED.

GND OPS: INVOLVED BUT ACCEPTABLE FOR A TWIN PROP. NWS VERY GOOD. RAPID 10 FT LATERAL STEP + CHANGE POSSIBLE WITHOUT OVERSHOOT. TAXIING IN CLOSE QUARTERS IS EASILY CONTROLLED.

T/O: 1800 FT ROLL ^{150 FLAPS} ROT 95 V. 102 KTS. HEAVY STICK FORCE ≈ 15 LB FOR ROTATION. NO NOTICEABLE PITCH CHANGE WITH GEAR + FLAP RETRACTION. ACCELERATED THROUGH 125KTS WITHIN 10 SECONDS OF LIFTOFF.

CLIMB: 80psi 2, 1600 rpm gave ≈ 1800 fpm 2-BK'.

CRUISE: 10K FT, 180 KIAS, 60psi 2, 1450 rpm, 525 gph fuel each, with 1600 pounds

L/S STABILITY: 180KT TRIM: KTS 220 200 160 140
 F_s 3-5 lb push 1-2 lbs 1/2 3-4 pound pull noticeably nonlinear on the slow side.

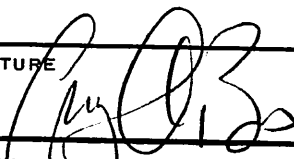
6. RECOMMENDATIONS

1. TEST A/C WITH CHARACTERISTIC STORES.
2. FIX THE KC-135 HEATING SYSTEM

COMPLETED BY

CAPT GREG BASS USMC

SIGNATURE



DATE

30 JULY 88

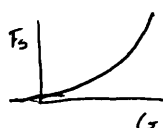
DYNAMICS: 180KTS 10K'
 S.D. Deadbeat and hard to excite with stick forces
 L.P. very lightly damped and easily excited. AND full cycle
 D.R. heavy rudder forces $T \approx 1.8 \text{ secs} > 7 \text{ overshoots}$
 Spiral = neutral
 Roll mode $\tau \approx 0.3 \text{ sec}$

CONTROLS: FLIGHT CONTROL SYSTEM IS REVERSIBLE. $\frac{1}{4}$ " of freeplay and $\approx \frac{1}{2}$ pound of friction + B.D. force in both axes on stick. AILERON freeplay most noticeable at slow speeds. Rudder forces are very high, Rudder freeplay $\approx \frac{1}{2}$ " and B.D. $\approx 10-25 \text{ lbs}$

MAN FLT: AOB/G F_s

30°	1 lb.
45°	2 lbs
2G	10 lbs
4G	25-30 lbs

noticeably non linear. FORCE INCREASES SUBSTANTIALLY ABOVE 2G's



STALLS: ALL AXES CONTROLLABLE UP TO STALL IN ALL CASES

CLEAN IDLE: AT $\approx 100 \text{ KTS}$ GET SLIGHT LEFT ROLL AND SLIGHT TURBULENCE SOUND. PROP SOUND REDUCES DUE TO PROP GOVERNOR FEATHERING PROP. GET NOSE DROP AT 86 KIAS

Flaps 15° { DIRTY IDLE: SLIGHT LEFT ROLL OFF AT 88 KTS, NOSE PITCH DOWN AT 80 KIAS
 DIRTY POWER ON: 50 psi τ (to simulate takeoff) 72 Kts get big g break with no buffet or warning. Prop wash hits tail at stall causing a little buffet on controls but not a good stall warning as it happens at the stall

SINGLE ENGINE: VMC same gear + flaps 15° = 87 KIAS. Rudder is very heavy and requires 100 lbs of force to counter feathered engine with other at 80 psi τ at 100 KIAS. Rudder force lightens near limit of travel on VMC test down to about 65 lbs ← read from instrumentation system

ACRO: 1600 rpm 230-240 KIAS for B. Roll and loops with $\approx 110 \text{ KIAS}$ on top. STICK FORCES ARE HEAVY BUT COORDINATION NOT A PROBLEM

LANDING: AIRSPEED CONTROL IN PATTERN WAS NOT A PROBLEM CLEAN OR DIRTY. POWER RESPONSE AND EXCESS POWER MADE GLIDESLOPE CONTROL FAIRLY EASY. GOOD FWD VISIBILITY THROUGHOUT FLARE AND AIRCRAFT TOUCHES DOWN IN A FAIRLY FLAT ATTITUDE. IF DEMOD AND MIN RUN LANDING IN 1000 FT OF LANDING ROLL. REQUIRES ENGINES AND REVERSE THRUST AND ABKIN AS IN T.O. BOTH ENGINES ARE REQUIRED FOR SUCCESSFUL COMPLETION. 45° FLAPS