		Head.	Arm.	Knees	Leg.	Thumb	Back	Glass	Height
Comp.	1.	L	✓	#	✓	✓	Pinch.	✓	50
Comp	2.	✓	✓	L	✓	✓	# LS.	L	20½
X	3	Crushed.	Amp.	# FRL	FL.	✓	✓	L	48
X	4	L	# RL	# FRL	✓	✓	✓	✓	?
Comp.	5	L	✓	L	L	L	L	✓	?
X	6	Missing	✓	✓	# L	L	✓	L	50
Comp	7	✓	✓	✓	✓	L	✓	✓	35
X	8	Missing	A(P)	✓	# R	✓	✓	✓	35
X	9.	L #	# L	L L	# R	A	✓	L	46
Comp	10	Crushed.	✓	✓	✓	L	✓	L	38
Comp	11	L	# FR	L # FR	# LR	A	L	A	46
Comp.	12	L	✓	✓	# LR	L #	L	✓	35
Comp	13	L	✓	[redacted]	# R	✓	✓	✓	2
X	14	Decap.	# LR	# FRL	# RL	✓	L	✓	
Comp	15	Crushed.	# R	# FR	# L	✓	✓	L	
X	16	Decap.	✓	✓	✓	✓	✓	✓	3
X	17	Decap.	# RL	✓	# RL	✓	L	✓	
X	18	Decap.	Amp R	L a	# R.	✓	✓	L	4
Comp.	19	# C	# R.	# R.	# R.	✓	✓	✓	3
X	20	Decap (Top)	✓	A LR	✓	✓	[redacted]	✓	
Comp.	21	✓	# RL	✓	LR	LR	✓	✓	4
Comp.	22	Crushed	✓	✓	✓	✓	✓	✓	
Comp	23	L	# RL	LR # FL	✓	✓	L	✓	4
Comp	24	#	✓	# L	# L	✓	L (Ruptured)	✓	3
Comp.	25	#	# R.	# FLR	✓	✓	✓	✓	4
X	26	Decap.	# R.	# L ✓	✓	✓	✓	✓	
Comp	27	# Leg	# R	# R	# R	L	Amp	✓	
Comp	28	L	✓	✓	# R	✓	✓	✓	3
Comp	29.	# L	# R.	✓	✓	✓	✓	✓	3
Comp	30	Crushed	# R	✓	# L	A	A	✓	3
Comp	31	Crushed # C	✓	✓	✓	✓	L	✓	2
Comp	32	Crushed	# L	✓	# L	✓	✓	✓	

		Head	Arms	Knees	Legs	Thorax	Back	Abdom	Wt
Comp.	33	# (top)	✓	✓	✓	✓	✓	✓	2[illegible]
x	34	# L	✓	✓	Amp R leg.	✓	L	✓	?
Comp	35	L	# LR.	# FLR	# R	A	A	A	38[illegible]
x	36	Decap.	# R	L R	Amp L hip Amp R TF	✓	L	✓	38
Comp	37	✓	✓	✓	✓	✓	L	✓	20
Comp.	38	✓	# L	# L	✓	✓	✓	✓	47
Comp	39	Crushed	✓	L LR.	✓	✓	✓	✓	36
Comp	40	✓	# L	# FR	✓	✓	✓	✓	?
x	41	L	# R	Amp. R&L / Pelvis		L	L	L	?
x	42	Decap.	# L	# R	✓	✓	L	✓	?
Comp.	43	L	# L	✓	✓	✓	✓	✓	?
Comp	44	Decap (top)	# L	# L	L	✓	L	L	?
Comp	45	✓	# R	✓	✓	✓	✓	✓	35
x	46	Head only	—	—	—	—	—	—	—
x	47	Head only	—	—	—	—	—	—	
Comp	48	Decap.	# R.	✓	# LR.	✓	Burns.	✓	
Comp	49	L A	# LR.	✓	# R	✓	✓	✓	?
x	50	Decap (top)	# LR.	Amp LF	# R.	✓	✓	✓	?
x	51	Crushed.	Comp RR.	L L	✓	✓	✓	✓	?
Comp	52	L	✓	✓	✓	L	✓	✓	37
Comp	53	✓	✓	# R	✓	✓	✓	L	?
x	54	Crushed	# LR	# L	# LR	✓	✓	✓	30
x	55	Crushed	# RL.	# FLR —	—	✓	✓ ??	(Amp ② L 4.) →	42
Comp	56	Decap	# RL	# FLR.	# R.	✓	✓	L	28
x	57	Head only	—	—	—	—	—	—	—
x	58	✓	# R		Comp L leg	L	L	L	
x	59	Decap	# R	# FR	✓	L	L	✓	?
x	60	Crushed	✓	✓	# L	✓	L	Spinal ~~[illegible]~~ [illegible] Pelvis	?
x	61	Crushed	Comp R shoulder.	# L	✓	✓	L	L	?
x	62	Decap	Comp R shoulder	Comp R leg	L	L	L	L	?
Comp	63	Crushed	# L	# LF # RF	L L	✓	✓	✓	?

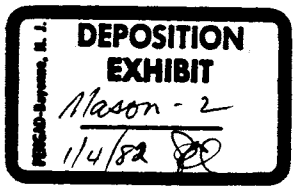
		Head	Arm	Knee	Legs	Thorax	Back	Abdomen	Weight
Comp.	64	Crushed H C	HL	HR	HLR	✓	✓	✓	42
x	65	HL	HR	Apparently body [illegible] [illegible]					?
x	66	HL	HL	HR HRF	Amp L Rip.	✓	✓	✓	29
Comp	67	Crushed	✓	✓	✓	✓	✓	✓	30
x	68	Decap.	HLR.	HR.	✓	✓	A	✓	30
x	69	Decap.	HL	HL	Amp RLeg	A	A.	✓	?
x	70	Lower Torso only.							
Comp.	71	Crushed	La.	HR	La	✓	✓	✓	?
x	72	Crush	Amp RH	Amp LR.	—	✓	L(Bruised)	L	?
x	73	Lower [illegible] only							
~~Comp~~ x	74	Crush.	Amp RH	✓	✓	✓	L	✓	?
x	75	Decap.	LLR	Amp R	Amp Leg	✓	L	L	?
x	76	HL	Head only ————						
Comp	77	Crush	✓	✓	✓	✓	A	✓	20½
x	78	Decap	HLR	Thorax only [illegible].					

(10 above died on upper deck)

Visible "unscathed" children 7 37 38 40 45

[illegible] " [illegible] [illegible] [illegible] 43 52

KURTH MASON



J. Robert Cromack, P.E.
Cromack Engineering Association, Inc.
Post Office Box 28243
Tempe, Arizona 85282

Mr. Cromack is expected to testify regarding the calculation of "G" forces in this accident; he will describe the limitations and potentials of such calculations in the understanding of impacts and potential injury such forces can cause to the human child. Mr. Cromack will testify concerning the accident of the C5A and will indicate the limitations and difficulties encountered in proper calculation of the specific "G" forces in this accident. Mr. Cromack will specifically discuss in detail the unreasonable approach to this question by Lockheed Aircraft Corporation, as indicated by prior testimony of Mr. Edwards and Dr. Gibbons. (45 minutes)

J. Kenneth Mason, M.D.
Regius Professor of Forensic Medicine
University of Edinburgh
66 Craiglee Drive
Edinburgh, Scotland

Dr. Mason is expected to discuss aviation pathology and the relationship between the C5A accident and the pathological development of the plaintiff, as well as the other C5A surviving children that have been examined. Dr. Mason is expected to express the opinion that, based on his experience as an aviation pathologist, the method by which to evaluate the injury-producing capacity of the C5A accident environment should be conducted from the viewpoint of the current condition and immediate post-accident condition of the children on board the C5A. Dr. Mason is expected to testify about the limitations and potentials of correlating the accident environment to the understanding of the current condition of the survivors of the accident. Dr. Mason is expected to testify that the accident environment of the C5A was sufficient to cause MBD. (45 minutes)

Douglas E. Busby, M.D.
The Cleveland Clinic
Department of Environmental Health
9500 Euclid Avenue
Cleveland, Ohio 44121

Chief, Environmental Medicine, Air and Space Medicine; Dr. Busby is expected to give testimony correlating the accident environment with

DEPOSITION EXHIBIT
Mason - 3
1/4/82

	Skull	C spine	Thorax	Ext.	Abd.		Days
AIGUILLON	N/10	# C1	Multiple rib	RTF	✓		7
CASTRO	Shattered		Shattered	Amp.	Amp R.		17
DIONNE*	[illegible]		Rup aorta [illegible] [illegible] [illegible] # [illegible]				10
JOHNSON	No #	# [illegible]	Mult. rib #	RLTF	# [illegible]	# [illegible] pelvis	7
KLINTON	[illegible]		[illegible]	RF LDK	Amp R. [illegible]		17
MORTON	Calvarium shattered # face		Multiple rib [illegible] Rup liver [illegible]	[illegible] RTF	LH RW		7
NANCE	# face calvarium [illegible] # face		Multiple rib	Multiple # [illegible]	Amp RS. LH. LW	[illegible] # pelvis [illegible]	17
PAGET	No #		Multiple rib [illegible]	—	—	[illegible]	7
PARKS	No #	# C4	Multiple rib # T4	RTF LTF +	LSD LR RW	# pelvis	7
WILLIS	# skull + face		All rib # T, [illegible]	RF LA	DLW	Rup liver [illegible] # pelvis	3.
~~[illegible]~~						# pelvis	7

(10)

← all except Dionne.

4 ex ~~10~~ 9 [illegible]
7 [illegible]
8 [illegible]
9 [illegible]

PANCUSR [illegible] # [illegible]. # RF

[illegible]

D[illegible] 17 day [illegible] [illegible]

SURVIVORS

LOCATION at IMPACT

WISE ([illegible])	[illegible] [illegible] [illegible] Knee [illegible], [illegible]. [illegible] # L3. [illegible]: ~~[illegible]~~ [illegible] [illegible] [illegible] ([illegible]) [illegible] 1976 [illegible] 30? [illegible] [illegible]	cargo
AUKES (F)	# [illegible] [illegible] Rly L[illegible] [illegible] C3 – [illegible] L3.	troop
BOUTWELL	[illegible]	troop
BRADLEY ([illegible])	MAD	fl. deck
WALLACE	MAD.	fl. deck
PERKINS ([illegible])	IDK Rv. [illegible]	troop
	? ? [illegible]?) [illegible] ([illegible])	
McATEER	MAD	fl. dec[k]

~~WARREN~~ MAD.

THAYNOR MAD. 71. deck

BICELLE MAD 1 Deck

~~BALDWIN~~ COE MAD

~~MEDLEY~~ MAD. 16 & 18

SNODEGAN. MAD 1st. deck

WIRTZ (E). MAD for WARRANT OFFICER troop

HARP 1st. deck

LANGFORD 1st. deck

~~ENGELS~~ 1st. deck

GOFFINET (NEILL) troop

HADLEY troop

OMEREK troop

ADAMS. Both were all in [illegible] and the last day for a little [illegible]

COFFINET No comment

WIRTZ They did not appear to [illegible] [illegible] [illegible] and [illegible] on me

BOUTWELL I did not [illegible] at [illegible] the [illegible] and exposure

HARDIN No comment

GASTWIRTH No comment

WISE No comment

THOMPSON No comment

DUNNE They seemed very drowsy with eyes closed

TAYLOR No comment

LINNEMANN Many cells seemed to be [illegible] [illegible] and are not very exposed

Clark Baby

This is a really important witness for the defendant

Documents? I agree that would have been [illegible] the argument per se.

Trapped gas effect. I'm [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] infant when [illegible] [illegible] [illegible] [illegible]. But I suppose I [illegible] [illegible] [illegible] [illegible]

Hypoxia. I don't understand what the meaning of 'asphyxia or [illegible]'. But it points to [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] — [illegible] [illegible] [illegible] in the effect of [illegible] hypoxia [illegible] [illegible] ~~[illegible]~~ [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] with [illegible] [illegible] [illegible], e.g. of an [illegible] [illegible]. Could be a [illegible] we don't know — that's what it's all about

I really [illegible] [illegible] [illegible] [illegible] [illegible] people [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible].

Drowning. I agree [illegible] [illegible] [illegible] [illegible] [illegible] — [illegible]

Convulsion [illegible] a '[illegible]' [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] a [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] (really [illegible] a [illegible])

Barn.

8. Bawsch

18 L. Shears

35 Haas

18 Given via all Bach

5 ex 30 # Cap

How old were children c̄ Cap infxn?

35% pneumonia

Dehydration w/ D?

32% otitis media

90% of 37 – Bronchopneumonia

Given full scale physical & psychological
evaluation for 38 N American
& 8 French quicker evaluation.
W. Germany, Holland, Germany etc under gen.
evaluation the results of children's development.

Not really conclusive observations — concerned
only with effects on children (some U.S. children)

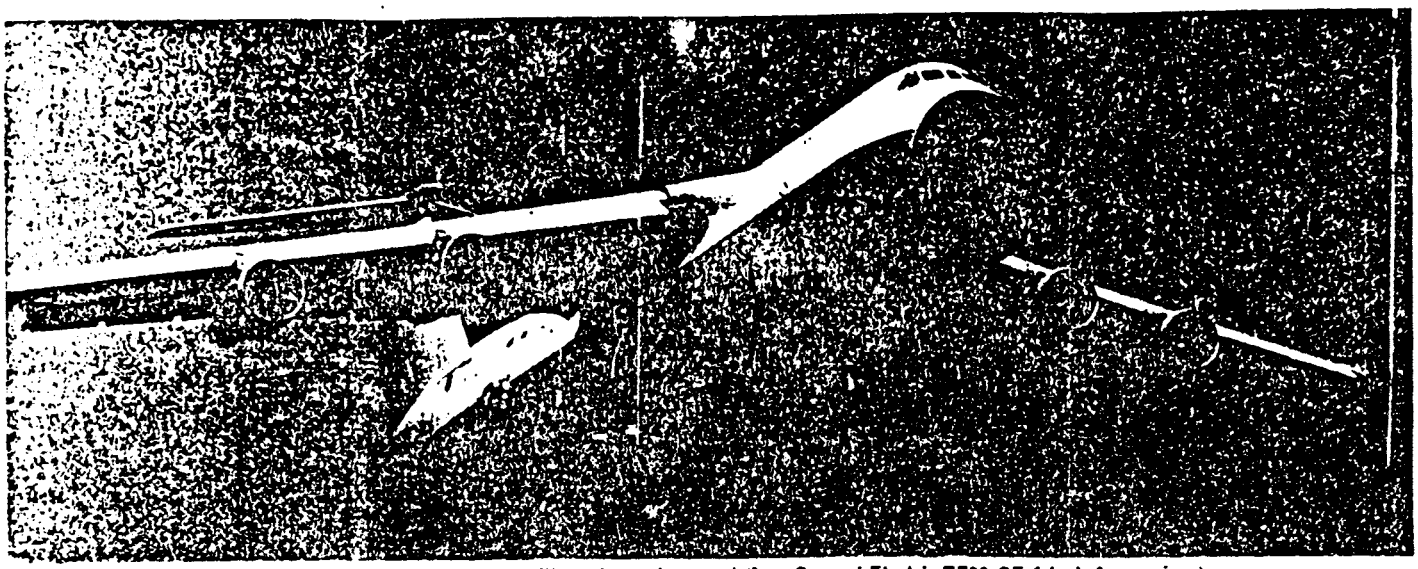
Dec 78 5 boys & 5 girls random evaluation in Washington.
1. examples of the nearly responsible ē
change in marijuana.
2 hypotheses.
3 apr 10 3 The drugs they used.
Impressions — not very much to find.
Probably some relevance in part of picture

Then found ego:rira developments in children — unique pattern
Compared with Korean & Viet refugees.
Interaction is different between
+ 2 parts of identical twins.

EEG abnormal in 1/3 children.

All children were exposed to drugs etc adverse
neurological abnormalities immediately after each
Much aggression (as in working experience)

? evaluation of aggression & response
aggression
trauma



Lockheed C-5A Galaxy long-range military heavy transport (four General Electric TF39-GE-1 turbofan engines)

In August 1965, the General Electric GE1/6 turbofan was selected for continued development. In October, Lockheed was nominated as prime contractor for the airframe. Construction of the first C-5A was started in August 1966, and it flew for the first time on 30 June 1968; the first operational aircraft (the ninth C-5A built) was delivered to Military Airlift Command on 17 December 1969. [illegible] and the USAF assigned the first eight aircraft to a flight test programme that extended into mid-1971. Contracts were placed covering the manufacture of 81 C-5As for the USAF. About 50% of the work, in terms of payments, was subcontracted.

In May 1973 the 81st C-5A was delivered, and by the end of 1974 the fleet had accumulated more than 186,000 flight hours. The value of the C-5A for rapid movement of large and/or heavy pieces of equipment has been demonstrated frequently since these aircraft became operational. Loads such as two M-48 tanks, each weighing 99,000 lb (45,000 kg), or three CH-47 Chinook helicopters, have been airlifted over transoceanic ranges.

Several combination tanker/cargo versions of the C-5A have been proposed to the USAF. These include the use of more powerful engines and increased structural strength to offer improved speed/altitude performance, greater fuel capacity, better payload-range and higher gross weights.

TYPE: Heavy logistics transport aircraft.

WINGS: Cantilever high-wing monoplane. Wing section NACA 6612 (mod) at 20% span, NACA 0011 (mod) at 43·7% and 79% span. Anhedral 5° 30′ at quarter-chord. Incidence 3° 30′ at root. Sweepback at quarter-chord 25°. Conventional fail-safe box structure of built-up spars and machined aluminium alloy extruded skin panels. Statically-balanced aluminium alloy ailerons. Modified Fowler-type aluminium alloy trailing-edge flaps. Simple hinged aluminium alloy spoilers forward of flaps. No trim tabs. Sealed inboard slats and slotted outboard slats on leading-edges. Ailerons and spoilers operated by hydraulic servo actuators. Trailing-edge flaps and leading-edge slats actuated by ball screwjack and torque tube system.

FUSELAGE: Conventional semi-monocoque fail-safe structure of 7079-T3 and 7075-T6 aluminium alloy and titanium alloy.

TAIL UNIT: Cantilever all-metal T-tail. All surfaces swept; anhedral on tailplane. All components are single-cell box structures with integrally-stiffened aluminium alloy skin panels. Variable-incidence tailplane. Elevators in four sections; rudder in two sections. No trim tabs. Rudder and elevators operated through hydraulic servo actuators. Tailplane actuated through hydraulically-powered screwjack. No anti-icing equipment.

LANDING GEAR: Retractable nosewheel type. Nose unit retracted rearward by hydraulically-driven ballscrews. Main units rotated through 90° and retracted inward via hydraulically-driven gearbox. Single nose shock-strut and four main-gear shock-struts are of Bendix oleo-pneumatic dual-chamber type. Four wheels on nose unit. Four main units (two in tandem on each side) each comprise a "triangular footprint" six-wheel bogie made up of a pair of wheels forward of the shock-strut and two pairs aft. All 28 tyres size 49 × 17-20 type VII 26-ply. Tyre pressures: main 111 lb/sq in (7·80 kg/cm²), nose 137 lb/sq in (9·63 kg/cm²) with in-flight deflation capability. Goodyear aircooled beryllium disc brakes, with fully-modulating anti-skid units. Cross-wind positioning of all units 20° to port or starboard by servo-controlled hydraulically-powered cylinders. Ground manoeuvrability enhanced by castoring forward main units.

POWER PLANT: Four General Electric TF39-GE-1 turbofan engines, each rated at 41,100 lb (18,642 kg) st. Twelve integral fuel tanks in wings between front and rear spars, comprising four main tanks (each 3,625 US gallons; 13,721 litres), four auxiliary tanks (each 4,625 US gallons; 17,507 litres) and four extended-range tanks (each 4,000 US gallons; 15,142 litres). Total usable capacity 49,000 US gallons (185,480 litres). Two refuelling points each side, in forward part of main landing gear pods. Flight refuelling capability, via inlet in upper forward fuselage, over flight engineer's station (compatible with KC-135 tanker). Oil capacity 36·4 US gallons (138 litres).

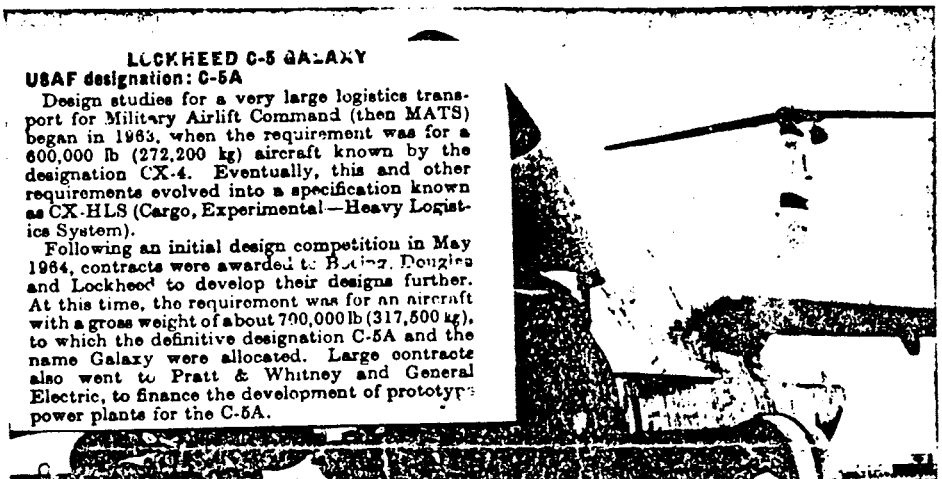
ACCOMMODATION: Normal crew of five, consisting of pilot, co-pilot, flight engineer, navigator and loadmaster, with rest area for 15 people (relief crew, couriers, etc) at front of upper deck. Basic version has seats for 75 troops on rear part of upper deck, aft of wing box. Provision for carrying 270 troops on lower deck, but aircraft is employed primarily as freighter. Typical freight loads include two M-60 tanks or sixteen ½ ton lorries; or one M-60 and two Bell

LOCKHEED C-5 GALAXY

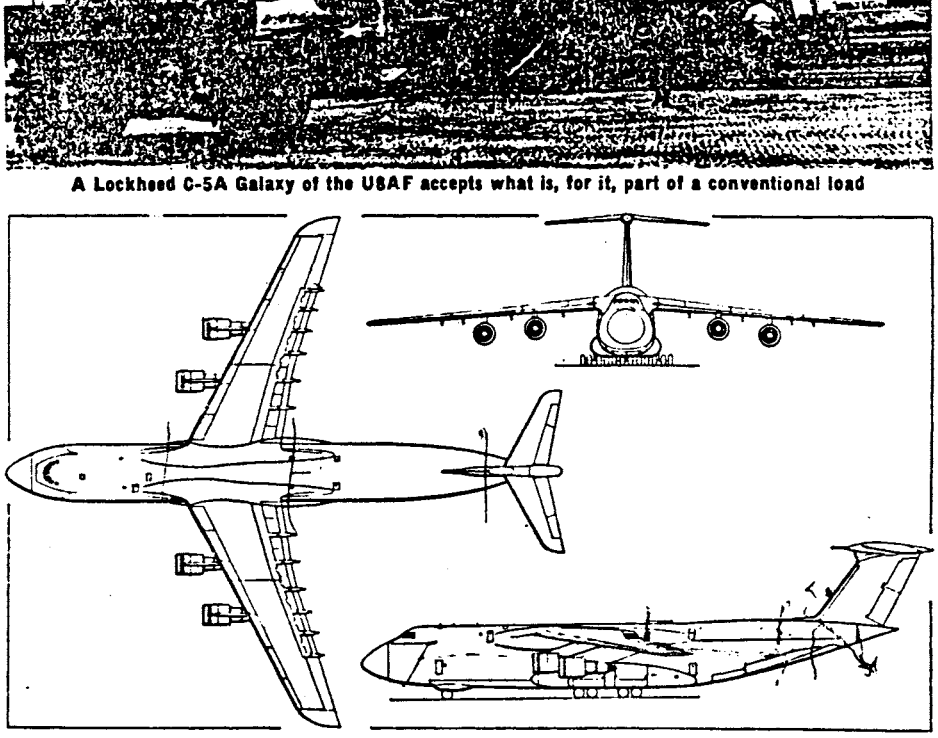
USAF designation: C-5A

Design studies for a very large logistics transport for Military Airlift Command (then MATS) began in 1963, when the requirement was for a 600,000 lb (272,200 kg) aircraft known by the designation CX-4. Eventually, this and other requirements evolved into a specification known as CX-HLS (Cargo, Experimental—Heavy Logistics System).

Following an initial design competition in May 1964, contracts were awarded to Boeing, Douglas and Lockheed to develop their designs further. At this time, the requirement was for an aircraft with a gross weight of about 700,000 lb (317,500 kg), to which the definitive designation C-5A and the name Galaxy were allocated. Large contracts also went to Pratt & Whitney and General Electric, to finance the development of prototype power plants for the C-5A.



A Lockheed C-5A Galaxy of the USAF accepts what is, for it, part of a conventional load



Lockheed C-5A Galaxy four-turbofan military heavy transport aircraft (*Pilot Press*)

Iroquois helicopters, five M-113 personnel carriers, one M-59 2½ ton truck and an M-151 ¼ ton truck; or 10 Pershing missiles with tow and launch vehicles; or 36 standard 463L load pallets. "Visor" type upward-hinged nose, and loading ramp, permit straight-in loading into front of hold, under flight deck. Rear straight-in loading via ramp which forms undersurface of rear fuselage. Side panels of rear fuselage, by ramp, hinge outward to improve access on ground but do not need to open for air-drop operations in view of width of ramp. Provision for Aerial Delivery System (ADS) kits for paratroops or cargo. Two passenger doors on port side, at rear end of upper and lower decks. Two crew doors on port side, at forward end of upper and lower decks. Entire accommodation pressurised and air-conditioned.

SYSTEMS: Electronically-controlled air-conditioning and pressurisation systems: pressure differential 8·2 lb/sq in (0·58 kg/cm²). Four separate hydraulic systems, pressure 3,000 lb/sq in (210 kg/cm²) each, supply flying control and utility systems. Electrical system includes four 60/80kVA AC engine-driven generators. Two APUs to provide auxiliary pneumatic, hydraulic and electrical power.

ELECTRONICS AND EQUIPMENT: Communications and navigation radio to military requirements. Norden radar. Nortronics inertial navigation system. Special equipment includes electronic Malfunction Detection, Analysis and Recording subsystem (MADAR) which scans and analyses over 800 test points.

DIMENSIONS, EXTERNAL:

Wing span	222 ft 8½ in (67·88 m)
Wing chord at root	45 ft 5·3 in (13·85 m)
Wing chord at tip	15 ft 4 in (4·67 m)
Wing aspect ratio	7·75
Length overall	247 ft 10 in (75·54 m)
Length of fuselage	230 ft 7½ in (70·29 m)
Height overall	65 ft 1½ in (19·85 m)
Tailplane span	68 ft 8½ in (20·94 m)
Wheel track (between outer wheels)	37 ft 5½ in (11·42 m)
Wheelbase (c/l main gear to c/l nose gear)	72 ft 11 in (22·23 m)
Crew door (lower deck):	
Height	5 ft 11 in (1·80 m)
Width	3 ft 4 in (1·02 m)
Height to sill	12 ft 11 in (3·94 m)
Passenger door (lower deck):	
Height	6 ft 0 in (1·83 m)
Width	3 ft 0 in (0·91 m)
Height to sill	11 ft 8 in (3·56 m)
Aft loading opening (ramp lowered):	
Max height	12 ft 10½ in (3·93 m)
Max width	19 ft 0 in (5·79 m)
Aft straight-in loading:	
Max height	9 ft 6 in (2·90 m)
Max width	19 ft 0 in (5·79 m)

DIMENSIONS, INTERNAL:

Cabins, excl flight deck:	
Length:	
upper deck, forward	39 ft 4 in (11·99 m)
upper deck, aft	59 ft 8½ in (18·20 m)
lower deck, without ramp	121 ft 1 in (36·91 m)
lower deck, with ramp	144 ft 7 in (44·07 m)
Max width:	
upper deck, forward	13 ft 9½ in (4·20 m)
upper deck, aft	13 ft 0 in (3·96 m)
lower deck	19 ft 0 in (5·79 m)
Max height:	
upper deck	7 ft 6 in (2·29 m)
lower deck	13 ft 6 in (4·11 m)
Floor area:	
upper deck, forward	540 sq ft (50·17 m²)
upper deck, aft	776·1 sq ft (72·10 m²)
lower deck, without ramp	2,300·9 sq ft (213·76 m²)
Height to floor (kneeled):	
forward	4 ft 4½ in (1·34 m)
aft	4 ft 9 in (1·45 m)
Volume:	
upper deck, forward	2,010 cu ft (56·91 m³)
upper deck, aft	6,020 cu ft (170·46 m³)
lower deck	34,795 cu ft (985·29 m³)

AREAS:

Wings, gross	6,200 sq ft (576·0 m²)
Ailerons (total)	252·8 sq ft (23·49 m²)
Trailing-edge flaps (total)	991·7 sq ft (92·13 m²)
Leading-edge slats (total)	648·5 sq ft (60·25 m²)
Spoilers (total)	430·7 sq ft (40·01 m²)
Fin	961·1 sq ft (89·26 m²)
Rudder	226·7 sq ft (21·06 m²)
Tailplane	965·8 sq ft (89·73 m²)
Elevators	258·7 sq ft (24·03 m²)

WEIGHTS AND LOADINGS (for 2·25*g*):

Basic operating weight	337,937 lb (153,285 kg)
Design payload	220,967 lb (100,228 kg)
Max ramp weight	769,000 lb (348,810 kg)
Max T-O weight	769,000 lb (348,810 kg)
Max landing weight	635,850 lb (288,445 kg)
Max zero-fuel weight	558,904 lb (253,515 kg)
Max wing loading	124·0 lb/sq ft (605·4 kg/m²)
Max power loading	4·69 lb/lb st (4·69 kg/kg st)

PERFORMANCE (at max T-O weight, except where indicated):

Max never-exceed speed
469·5 knots (472 mph; 760 km/h) CAS or Mach 0·875

Max level speed at 25,000 ft (7,620 m)
496 knots (571 mph; 919 km/h)

High-speed cruise at 25,000 ft (7,620 m) at normal rated thrust
460-480 knots (530-553 mph; 853-890 km/h)

Average cruising speed
450 knots (518 mph; 834 km/h)

Aerial delivery drop speed
130-150 knots (150-173 mph; 241-278 km/h)

Stalling speed, 40° flap at max landing weight
104 knots (120 mph; 194 km/h) EAS

Rate of climb at S/L, ISA, at max rated thrust
1,800 ft (549 m)/min

Service ceiling at AUW of 615,000 lb (278,955 kg)
34,000 ft (10,360 m)

Min ground turning radius 75 ft 0 in (22·86 m)

Runway LCN:

Concrete	40
Asphalt	64
T-O run	7,000 ft (2,134 m)
T-O [illegible]	8,400 ft (2,560 m)
Landing from 50 ft (15 m)	3,600 ft (1,097 m)
Landing run	2,230 ft (680 m)

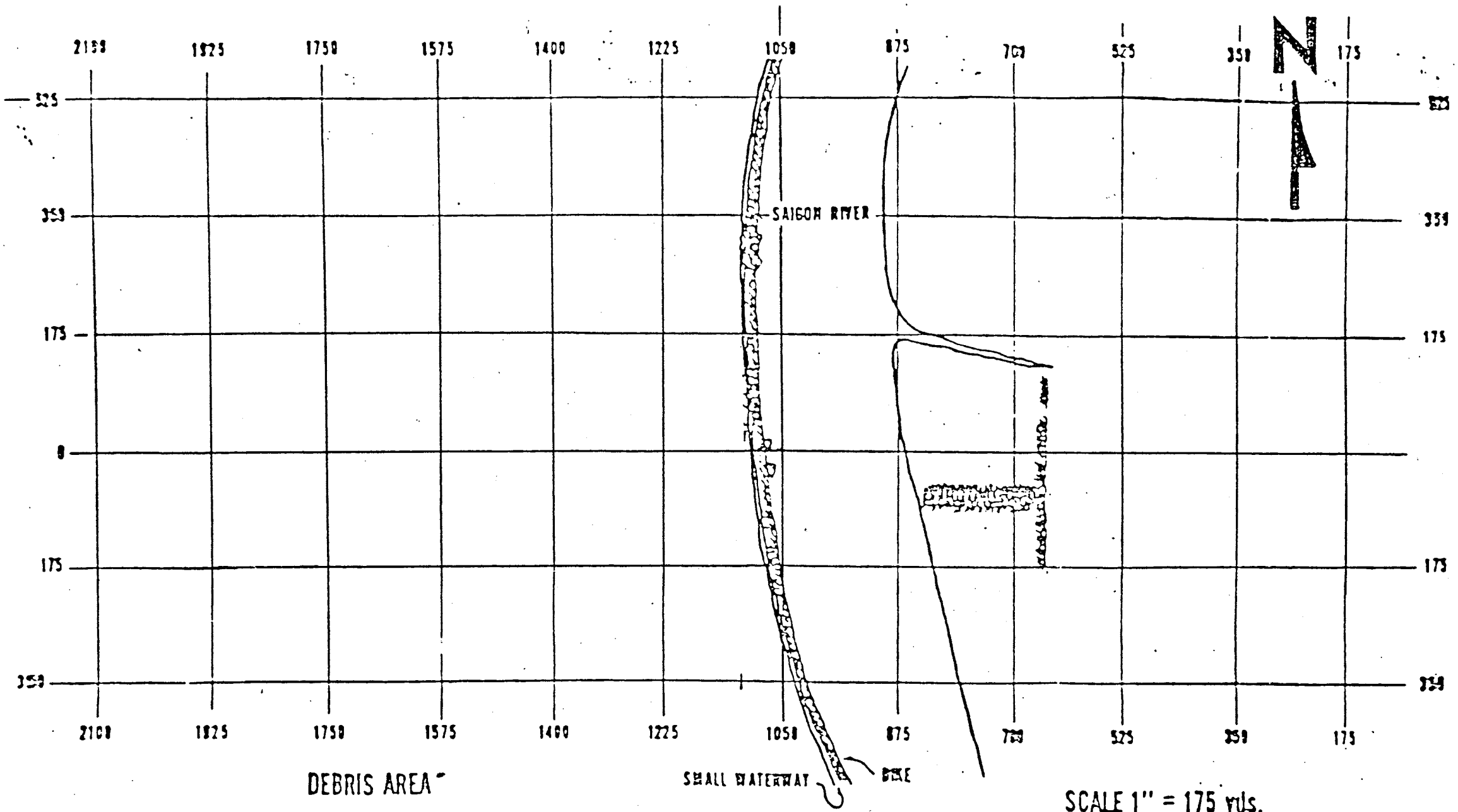
Range with 220,967 lb (100,228 kg) payload
3,250 nm (3,749 miles; 6,033 km)

Range with 112,600 lb (51,074 kg) payload
5,670 nm (6,529 miles; 10,505 km)

Ferry range 6,940 nm (7,991 miles; 12,860 km)

WRECKAGE DIAGRAM

C-5A SN 68-218 4 APRIL 1975



Accident Report

On April 4, 1975 a Lockheed C-5A aft cargo door failed at approximately 2300 ft. The failure resulted in a sudden decompression of the aircraft and also cut the 1 and 2 hydraulic lines. These hydraulic lines controlled the pitch (or up and down motion of the nose) and the yaw (sideways motion of the fuselage) of the aircraft. The loss of pitch and yaw control made the C-5A essentially an uncontrollable vehicle. The only control the pilots had were roll control and engine thrust control. The pilots were able to restore minimum control to the aircraft by a combination of banking the aircraft and thrusting the engine in order to keep a quasi-level descent for an emergency landing. A quasi-level descent being a series of dives and then pull-ups until the aircraft was at landing altitude. The aircraft approached its first impact point on the east side of the Saigon River. The aircraft was at full throttle and probably at a slight roll angle (port wing down). The velocity of the aircraft as recorded by the MADAR DATA was approximately 456 ft./sec. This velocity is about 2 1/2 times the aircraft's normal landing velocity. It will be demonstrated later that the C-5A came to a complete stop in a shorter distance (~1900 ft) than it does when it lands at its normal landing velocity (~2300 ft.). Therefore the aircraft impacted at 456 ft./sec. and stopped in approximately 1900 ft. A normal landing would be at approximately 190 ft./sec. and would stop in about 2300 ft.

Impacts on the East Side of the Saigon River

As the C5-A approached its first impact point it had a velocity of 456 ft./sec. (270 knts.) and the pilots had no control of the aircraft. There was no record of the descent speed. The initial impact occured when the aft landing gear struck a dike. The aircraft still lofting above the ground struck another dike this time more severely than the first. The landing gear dug into the soil for a short distance. The aircraft bounced up again and then settled back down hitting a third dike. The landing gear again dug into the soil. It is suspected that two complete sets of landing gear were loss during or shortly after this impact. Photographs show wheels and pieces of the landing spread throughout this area. The C-5A bounced up again and made several small ruts with its engines or wing tips. The aircraft then hit another dike. Finally the C-5A became airborne again slicing several treetops off with its starboard wing. It is estimated from the films that there were at least eight or more distinct impact points east of the Saigon River. These multiple impacts all occurred in a distance of about 350 yards. It is speculated that the impacts were of sufficient magnitude (snapped off several pieces of landing gear) to have weakened and eroded part or all of the C-5A structure.

Impacts on the West Side of the Saigon River

The C-5A crossed the Saigon River at an estimated velocity of 456 ft./sec. (270 knts.). This velocity cannot be relied upon and is believed to have been less because of the series of impacts encountered on the east side. The angle of attack of the aircraft

(nose up or down) also cannot be estimated because of the lack of in-flight data. It is to be emphasized that the pilots had no control of the C-5A during any of the impacts.

The initial impact on the west side was with a dike. This impact snapped the remainder of the landing gear off. The aircraft then went into a sliding skid for about 125 yards. After this point the skid marks disappeared indicating that the aircraft had lifted off the ground. The C-5A lofted about 150 yards and then came down with sufficient impact to break the aircraft into four separate sections: the T-tail, the aft troop compartment, the flight deck and the complete wing structure. At this point of impact large amounts of debris were found and a large section of the cargo floor was located. Northwest and about 100 yards away from the last impact point the T-tail was found. The T-tail had a clean fracture indicating a sudden separation from the fuselage. It appears the tail was thrown over to its location as a result of the impact. The flight deck moved in a southwest direction and traveled approximately 400 yards from the impact. It appears that the flight deck traveled about 150 yards in the air and skidded to a stop in the remaining 250 yards. The wing structure also detached during the impact and through a combination of inertial and lift forces was propelled approximately 525 yards from the point of last impact. The aft troop compartment became detached from between the wing section and the T-tail, and was propelled from the impact primarily by inertial forces and possibly some lift force. The troop compartment began digging into the ground approximately 175 yds. from the point of last impact. The aft troop compartment then came to a sudden stop after hitting an elevation. The total distance the troop compartment dug into the ground was approximately 5 lengths of the structure or about 85 yards.

The velocity of the four sections were equal at the point of the last impact. The velocity at the last impact must be estimated. It was estimated earlier that the flight speed of the C-5A was approximately 270 knts. (456 ft./sec.) at the beginning of the west side approach. We can assume that the aircraft did not slow substantially from the sliding skid which was ~~125~~ 45 yds. long. Therefore, the velocity of the troop compartment could have conservatively been about 3/4 of 270 knts., or about 200 knts. (340 ft./sec.) at the point of detachment from the wing and tail. Using the assumption of constant deceleration, the average g-force imposed on the people in the troop compartment would be approximately ~~7.5~~ 13.5 g's. This figure does not include peak g levels and it also ignores the sudden impact imposed onto the troop compartment by the hill.

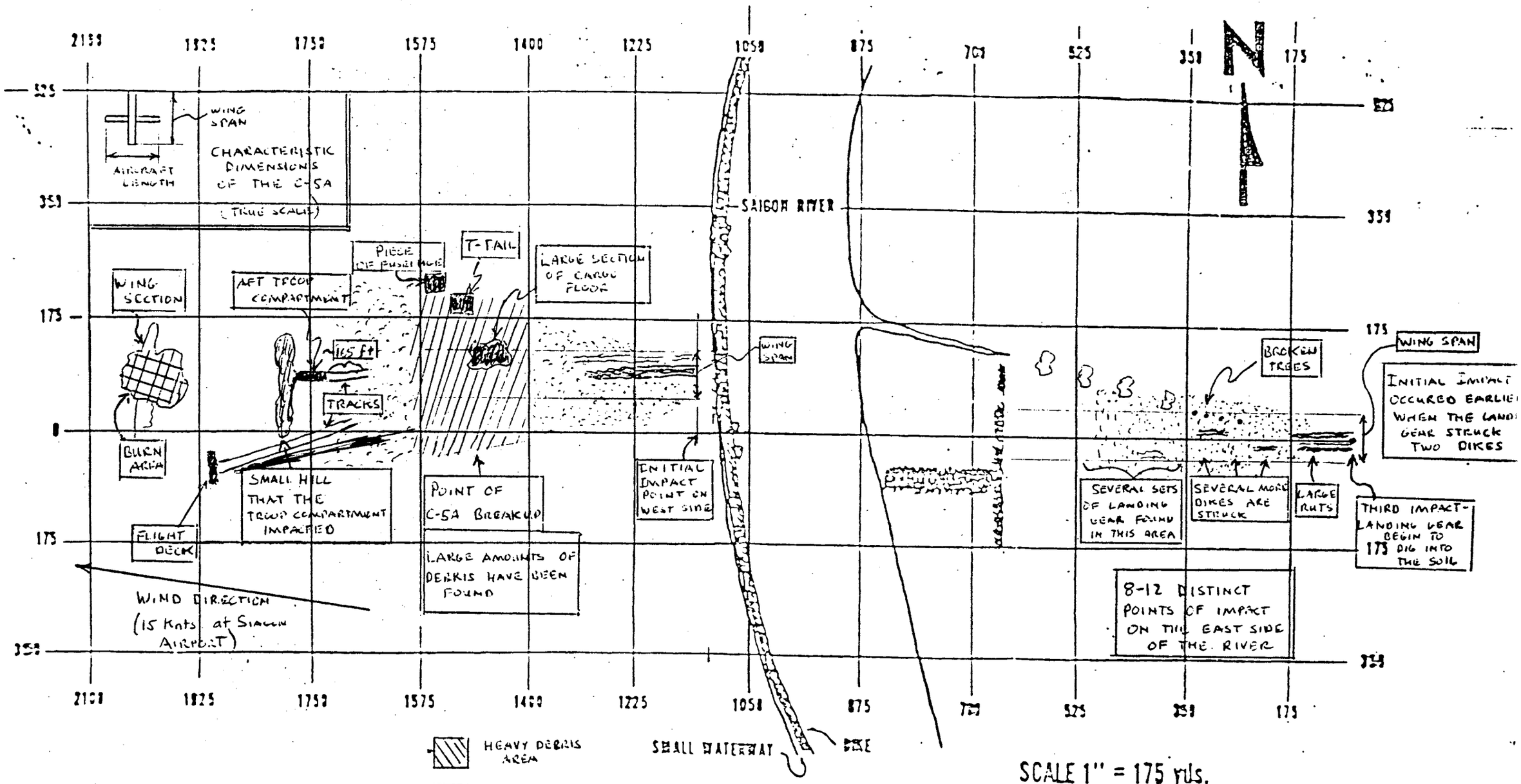
$\frac{340^2}{64.4(135)} =$

Summary

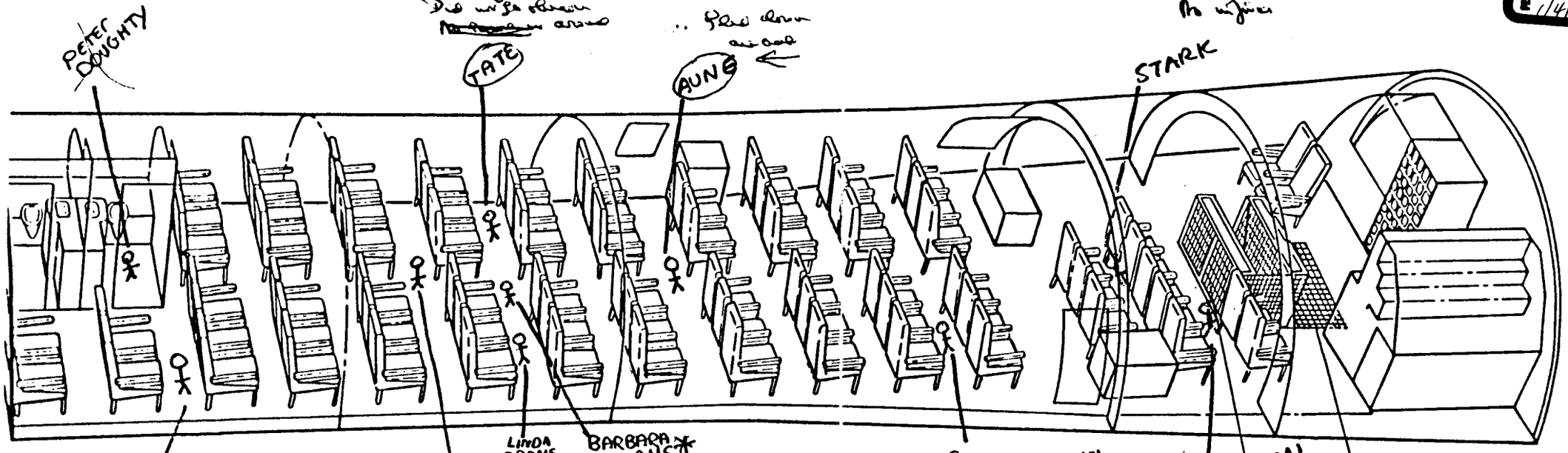
In conclusion the C-5A had an approach speed of 2 1/2 times its normal landing speed. The pilot had no control of the aircraft before or during the crash landing. The C-5A structure experienced a series of 8-12 impacts, some sufficiently severe to break off landing gear, on the east side of the Saigon River. Approaching the west side of the river the aircraft had velocity of approximately 270 knts. It hit a dike and slide for a short time and became airborne. The C-5A came back down and broke into four sections, each moving at a velocity of approximately 200 knts. The estimated average g-level experienced by the aft troop compartment was about ~~7.5~~ 13.5 g's.

DEPOSITION EXHIBIT
Mason 6
1/4/82

WRECKAGE DIAGRAM
C-5A SN 68-218 4 APRIL 1975

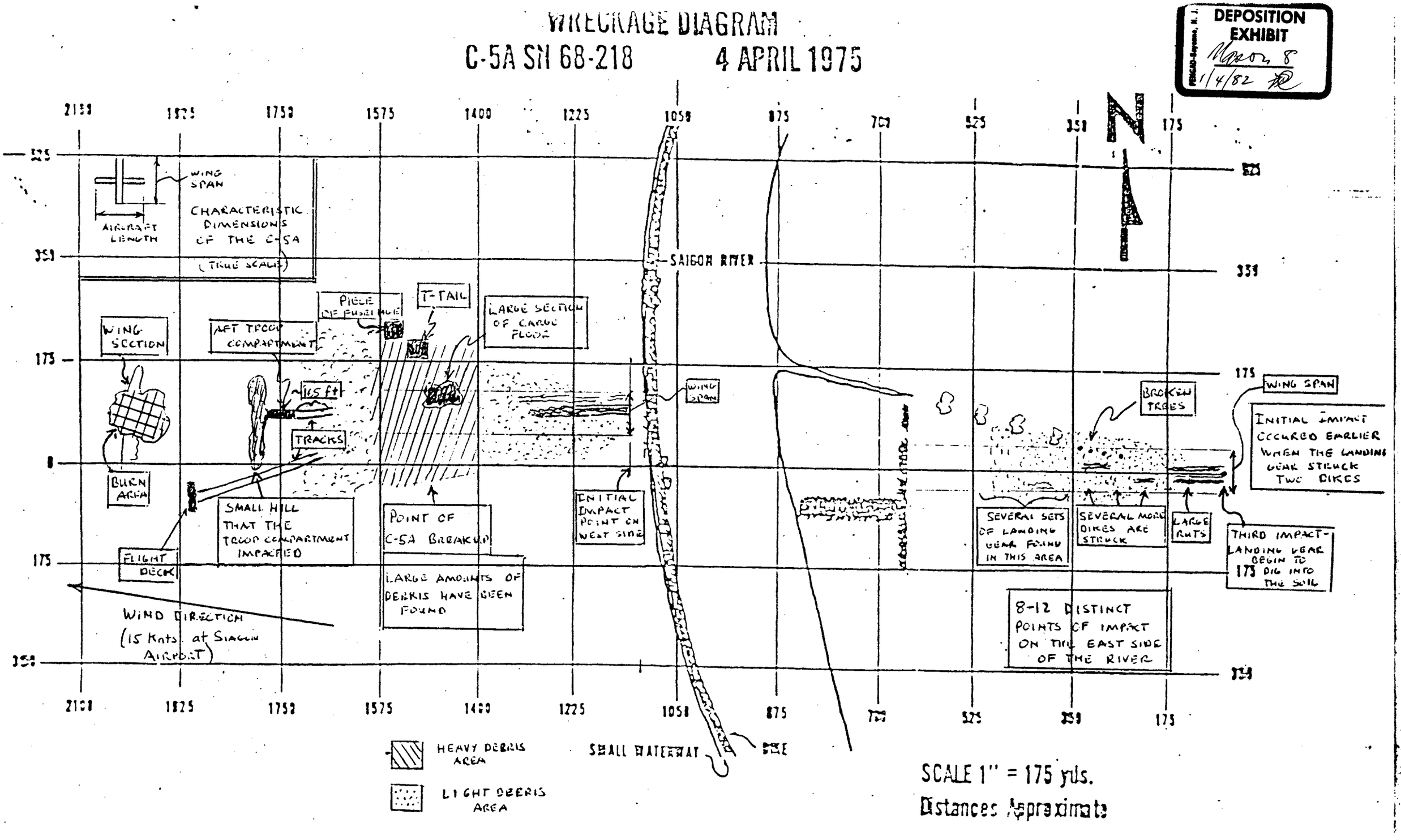


SCALE 1" = 175 yds.
Distances Approximate



WRECKAGE DIAGRAM
C-5A SN 68-218 4 APRIL 1975

DEPOSITION EXHIBIT
Mason 8
1/4/82



SCALE 1" = 175 yds.
Distances Approximate

NOTES OF MEETING ON FRIDAY 7th MARCH 1980.

The Accident

4th April 1975

FFAC - Friends for all children

Adoption (? Agency). Children taken from maternity units - nurseries

- Australia, Europe or USA.

Operation 'Babylift'

C5A 228 children from Saigon Take-off 1600 hours.

15 minutes after take-off - rear end door blew out

23-2400 feet. Controls taken out so rapid descent impossible. No oxygen available for children.

Crash landed 18 minutes after - 270 kts in paddy field.

One impact - then over river.

79 children died. 30 adults died (Prob. ~~39~~ 59) 57 + 2 Guam children.

(figures different from those given).

Entire flight deck crew survived.

Surviving children evacuated in 2 hours. (1st helicopter 20 minutes).

- Saigon and most discharged to FFAC facilities and flown out of Vietnam next day arriving San Francisco 6.4.75. - adopting families.

Legal Aspects

1975. FFAC brought suit against Lockheed on behalf of survivors.

September 1979. Lockheed admitted liability and agreed to pay proven damages.

Guardian ad litum appointed for interests of children - asked Cohen to organise a medical evaluation of children.

Money comes from Lockheed as ordered by the Court.

In/...

In answer to questions

8½ minutes above 12,000 feet.

No burning in upper compartment but some survivors burnt.

75% children 3-8 months old.

oldest up to 10 years.

150 { 146 surviving children from top
4 from bottom

154 on upper deck - 150 survived

2 seen dead in seat - intact, no injuries

2 ? ejected dead

82 on bottom - 4 survived

Burns At least 12 out of 54 children burnt on upper deck.

Upper deck 2 died later. 1 myocarditis

1 ? SIDS

Preliminary Analysis of the Accident

i) Conditions at altitude

Sudden decompression at 24,000 feet.

a) Effect of decompression nil per se

? Turbulence - very little evidence

b) Hypoxia. 8 minutes at hypoxic altitude

Children more susceptible than adults

Cortex more susceptible than rest of brain.

Children seen to be blue and collapsed.

?? what happened to adults

did they pass out?

ii) Conditions on ground

a) Effects of trauma

b) Effects of any C^{O} or cyanide.

COMPOSITE OF

TROOP COMPARTMENT

INJURIES

[CREW]

NEILL, Harriet Goffinet:	Fractured clavicle Burns on ear Bruises all up and down backs of legs Lacerations - right leg and thigh Big hematoma on leg and under right arm Pulled muscles in back
TATE, Marcia Wirtz:	No physical injuries, but suffered from extreme fright -- remembers only one impact, so may have lost consciousness
AUNE, Regina:	4 broken bones in right foot Puncture wound on leg Decompression fracture of L-3 in back Laceration on elbow Cuts and scrapes Multiple black and blues
GMEREK, Gregory:	Fractured ribs Lacerations on forehead and chin Lost consciousness for a time Great difficulty breathing

PARKER, William	DIED: Chronic brain syndrome Fracture left femur Hemophorax left partial (See Certificate of Death, attached)
BOUTWELL, Olen:	Unknown, other than hurt ribs ("minor injury")[1]
DOUGHTY, Peter:	Unknown ("minor injury")[1]
PERKINS, Howard:	STATEMENT[2] is missing, but known to have dislocated right shoulder and knee
HADLEY, James:	No injury

[CIVILIANS]

ADAMS, Barbara:	DIED: Crushed and bruised chest Multiple bruises and lacerations all over body (See Autopsy Report, attached)
ADAMS, Linda:	Whiplash Torn knee pads, muscles stretched in both legs Cut on foot that left scar
THOMPSON, Thelma:	Full extent of injuries not known -- Received stitches but not known for what Pain in ears during deceleration

DERGE, Susan:	Lost her ear
	Back broken in 4 places
STARK, Merritt, M.D.:	No apparent injuries
LIEVERMANN, Christie:	Multiple bruises and scratches on arms and legs
	Pulled muscles -- right leg and arm

Survivors from group

G. Wiser

Tony Dyke

Ty DeBolt

Adam Wright (U.M.) Was in second

vehicle

1 "Minor injury" : see "status" category of Tab 55 to Collateral Report (attached)

2 Statement given to Collateral Board post-crash.

NAME	RANK	SSAN	CREW POSITION	LOCATION DURING RAPID DECOMP	LOCATION AT IMPACT	STATUS
TRAYNOR, DENNIS	CAPT	257-70-7773	Pilot	Left pilot's seat	Same	Minor injury
HARP, TILFORD	CAPT	448-46-8613	Copilot	Copilot's seat	Same	Minor injury
LANGFORD, JOHN	CAPT	263-80-1649	Navigator	Navigator's seat	Same	Minor injury
ENGELS, ALLEN	TSGT	560-50-9153	Flt Engineer	Flt Engr Seat	Same	Minor injury
MALONE, KEITH	CAPT	368-42-9585	Pilot	Crew rest area	IP seat	Minor injury
MELTON, EDGAR	CAPT	450-64-4390	Pilot	Crew rest area	Cargo compartment	Fatal injuries
WALLACE, WILLIAM	MAJ	140-26-7683	Navigator	Crew rest area	Same	Minor injury
DIONNE, DONALD	SSGT	566-62-8342	Flt Engineer	Cargo compartment -	Thrown from aircraft at rapid decompression	Fatal injuries
McATEE, LYNN	MSGT	516-38-4916	Flt Engineer	Cockpit	Crew rest area	Minor injury
DOUGHTY, PETER	TSGT	011-30-6164	Loadmaster	Troop compartment	Same	Minor injury
AGUILLON, FELIZARDO	TSGT	562-54-6459	Loadmaster	Cargo compartment	Same	Fatal injuries
PAYNE, WENDLE	MSGT	493-28-1258	Loadmaster	Cargo compartment	Same	Fatal injuries
BRADLEY, PERCY	TSGT	243-50-1552	Loadmaster	Cargo compartment	Crew rest area	Minor injury
SNEDEGAR, RAY	SMSGT	466-66-6602	Loadmaster	Crew rest area	Same	Minor injury
PERKINS, HOWARD	SMSGT	401-36-4229	Loadmaster	Aft ladder	Troop compartment	Dislocation right shoulder and knee
PARKER, WILLIAM	TSGT	458-54-6224	Loadmaster	Troop compartment	Same	Fatal injuries
AUNE, REGINA	LT	274-40-2699	Flight Nurse	Troop compartment	Same	Fracture right foot
WIRTZ, MARCIA	LT	310-54-6412	Flight Nurse	Troop compartment	Same	Minor injury
GOFFINET, HARRIET	LT	303-50-3219	Flight Nurse	Troop compartment	Same	Fracture clavicle
JOHNSON, DENNING	TSGT	246-46-7935	Med Tech	Cargo compartment	Same	Fatal injuries
HADLEY, JAMES	SSGT	507-60-0915	Med Tech	Troop compartment	Same	No injury
GMEREK, GREGORY	SGT	364-52-8354	Med Tech	Troop compartment	Same	Fractured ribs
WISE, PHILLIP	SGT	361-54-4655	Med Tech	Cargo compartment	Same	Concussion
BOUTWELL, OWEN	MSGT	447-24-2075	Med Tech	Troop compartment	Same	Minor injury
KLINKER, MARY	CAPT	312-56-1214	Flight Nurse	Cargo compartment	Same	Fatal injuries
PAGET, MICHAEL	SSGT	548-80-6009	Med Tech	Cargo compartment	Same	Fatal injuries
CASTRO, JOE	MSGT	545-52-4308	Photographer	Cargo compartment	Same	Fatal injuries
NANCE, KEN	SGT	520-54-4705	Photographer	Cargo compartment	Same	Fatal injuries
WILLIS, WILLIAM	LTCOL	244-44-3250	ACM	Cockpit	Cargo compartment	Fatal injuries

4/4 Attachment "A"

DEPARTMENT OF THE AIR FORCE
WASHINGTON, D.C. 20330

REPORT OF CASUALTY

1. REPORT NUMBER AND TYPE: R-159 - Final
Completes Report Number R-137

2. DATE PREPARED: 6 May 75

3. SERVICE IDENTIFICATION (Name, Social Security Number, Grade or Rate, Component, Branch)

PARKER, William Monroe, FR , TSgt, Regular, USAF

4. CASUALTY STATUS a. [ ] BATTLE [X] NON-BATTLE b. COMMENCED TOUR DATE

c. STATUS: [X] DEATH [ ] MIA [ ] MISSING [ ] MISSING IN ACTION [ ] CAPTURED [ ] OTHER _____

d. DATE: 21 Apr 75 e. PLACE Tripler Army Med Ctr, Honolulu HI

f. CAUSE Injuries received as a result of military aircraft accident (C-5A Loadmaster)

5. a. DATE AND PLACE OF BIRTH	b. RACE	c. SEX	d. RELIGIOUS PREFERENCE
11 Dec 38 - Caddo OK	N/A	N/A	N/A

6. DATE AND PLACE OF LAST ENTRY ON ACTIVE DUTY IN CURRENT STATUS AND HOME OF RECORD AT TIME
N/A

7a. PAY GRADE	b. BASIC PAY	c. INCENTIVE/ADDITIONAL PAY	d. CHECK IF APPLICABLE
E-6	N/A	[ ] YES [ ] NO N/A	[ ] CREW [ ] PASSENGER

8. DUTY STATUS
Retired - Physical Disability (Chronic brain syndrome; Fracture right femur; Hemophorax left partial) effective 17 Apr 75#

9. INTERESTED PERSONS (Name, Address, Relationship)

Mrs Shirley J Parker		wife
Gina I Parker	same	dau
Connie J Parker	same	dau
Christie G Parker	same	dau
Randall J Parker#	same	son*

10. REPORT FOR VA TO FOLLOW [ ] YES [X] NO

11. REPORTING COMMAND AGENCY AND DATE REPORT RECEIVED IN DEPARTMENT
HICKAM AFB HI - 22 APR 75

12. PRIOR SERVICE DATA
[X] YES [ ] NO AF18509745

13. REMARKS

*Mrs Minnie E Parker mother

SGLI: BY LAW LUMP SUM $20,000

NOTE: THIS FORM MAY BE USED TO FACILITATE THE CASHING OF BONDS, THE PAYMENT OF COMMERCIAL INSURANCE, OR IN THE SETTLEMENT OF ANY OTHER CLAIM IN WHICH PROOF OF DEATH IS REQUIRED

FOOTNOTES:
#Indicates change
1. Adult next of kin.
2. Beneficiary for gratuity pay in event there is no surviving wife or child—so designated on record of emergency data.
3. Beneficiary for unpaid pay and allowances—as designated on record of emergency data.

14. DISTRIBUTION
NOT USED

15. BY ORDER OF THE SECRETARY OF THE AIR FORCE

DEAN M. MURPHY, Lt Colonel, USAF
Ch, Casualty Rprtg & Survivor Assistance Br

DEPARTMENT OF THE AIR FORCE · HEADQUARTERS U.S. AIR FORCE · OFFICIAL

DD FORM 1 FEB 73 1300 REPLACES DD FORM 1300, 1 MAR 60, WHICH IS OBSOLETE.

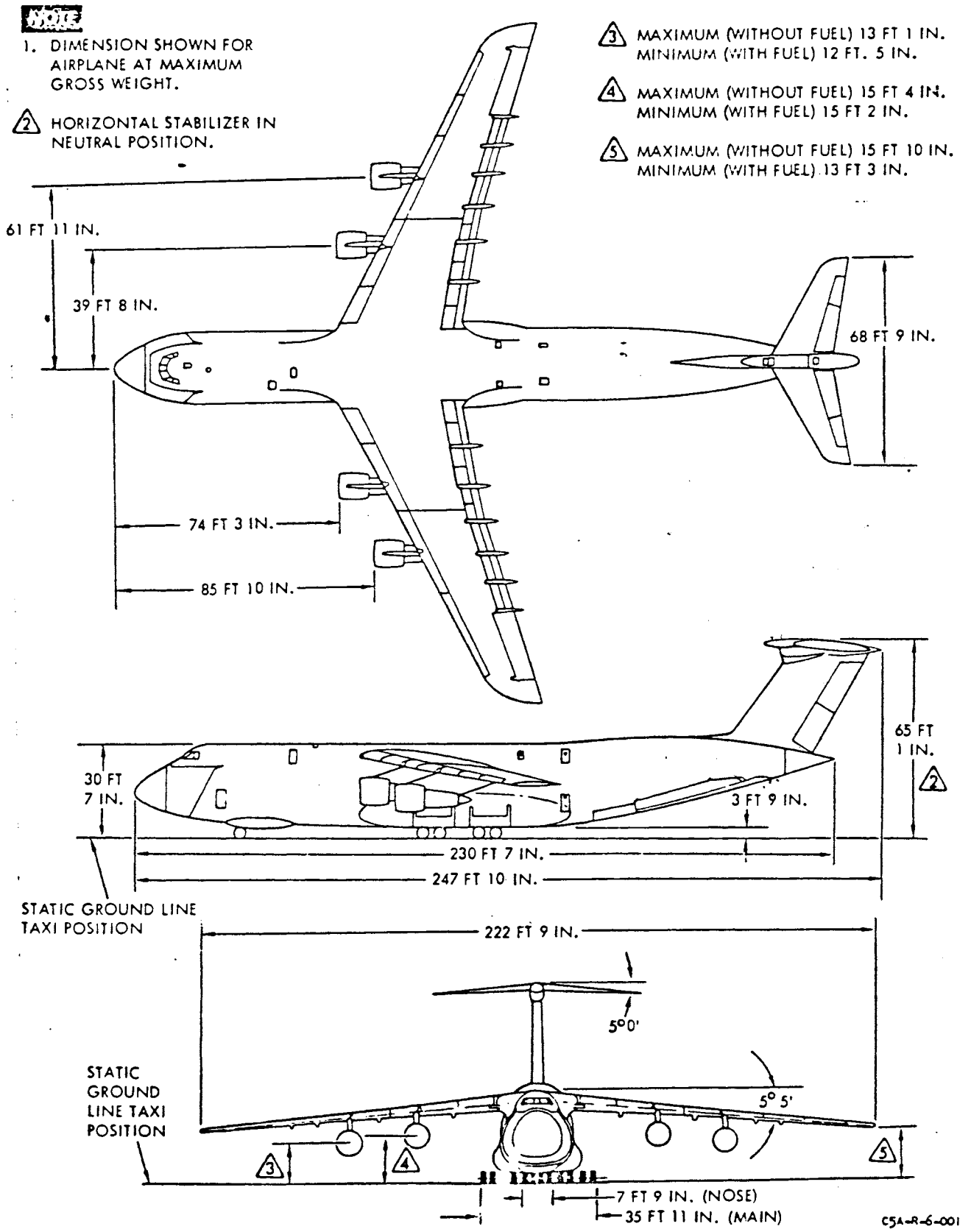
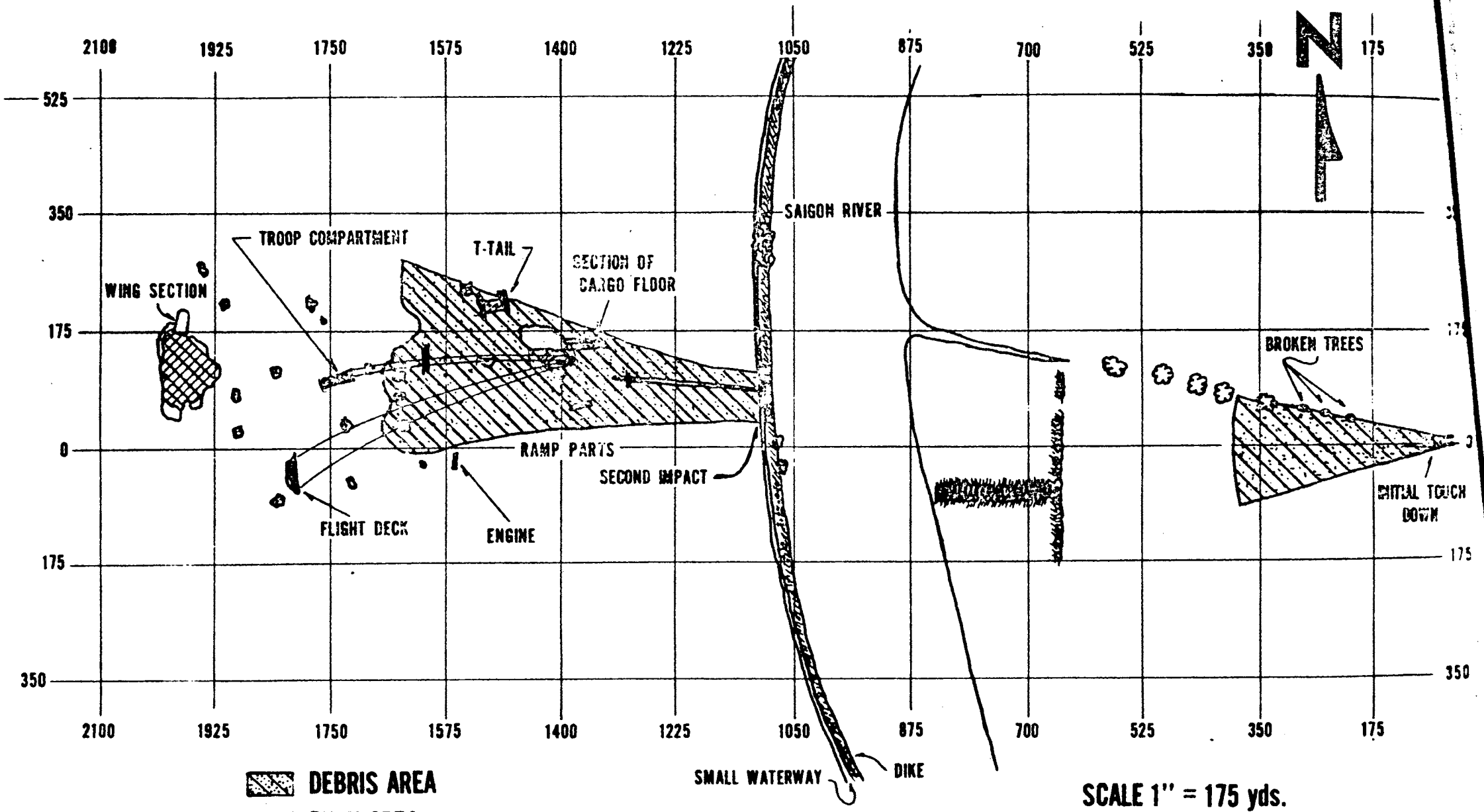
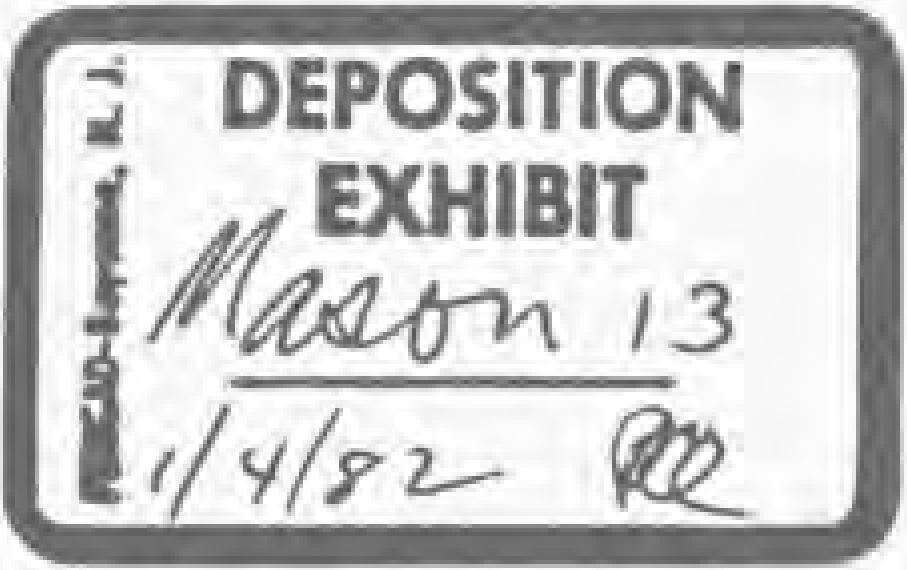


Figure 1-1. Airplane Dimensions

DEPOSITION EXHIBIT
Mason 12
1/4/82

WRECKAGE DIAGRAM
C-5A SN 68-218 4 APRIL 1975




DEPOSITION
EXHIBIT
Mason 13
1/4/82