

AIRCRAFT CONSIDERED FOR THE RCAF TACTICAL ROLE.

1. Grumman F11F-1F Super Tiger
2. Republic F105 D Thunderchief with J75 Engine.
3. Republic F105 D Thunderchief with Iroquois Engine.
4. McDonnell F101 Mk. 2 Voodoo.
5. McDonnell F4H.
6. Lockheed F104 G Starfighter.
7. Northrop N-156 F.

May 12, 1959.

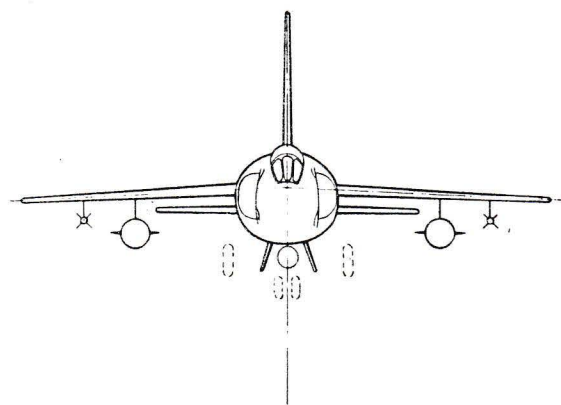
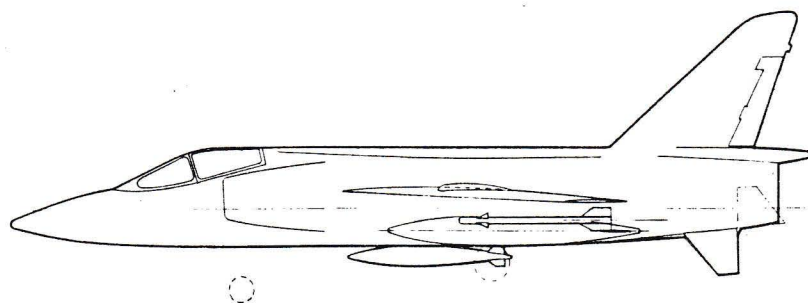
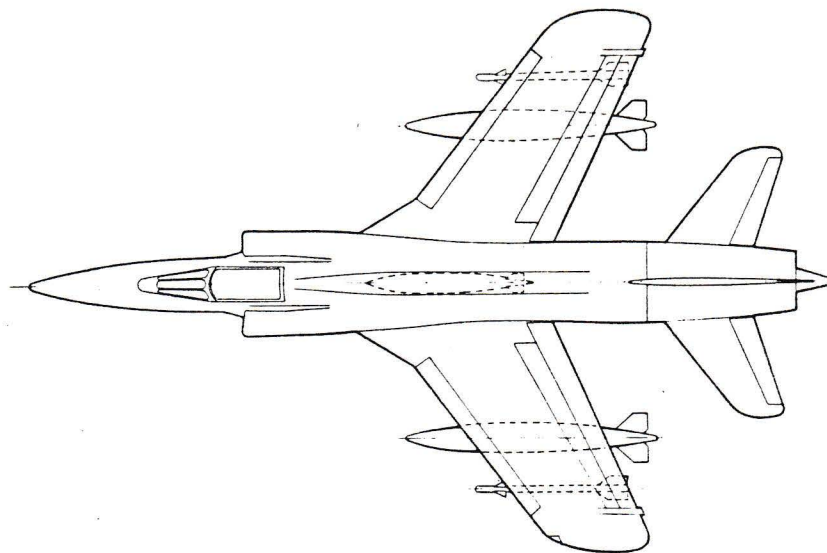
	F11F-1F	F105D J75	F105D Iroquois	F101 Mk.2	F4H	F104G	F104E	N 156
CONFIGURATION.								
Bomb	External	Internal	Internal	External	External	External	External	External
Sidewinders	2	4	4	4	4	2	2	2
Guns	None	1-T160	1-T160	3-T160	None	1-M61	1-M61	None
Engines	1-J79GE7	1-J75P19	Iroquois	2-J57P55	2-J79GE7	1-J79GE7	1-J79GE7	2-J85
Internal Fuel (lbs)	7728	7550	7550	13940	14050	5826	5826	2880
External Tanks (gal.)	2-150	3-450	3-450	2-450	2-370	2-195	2-195	2-150
External Fuel (lbs)	1920	8680	8680	5760	4800	2535	2535	1920
TOTAL FUEL (lbs.)	9648	16230	16230	19600	18850	8361	8361	5800
Design Load Factor	7.5	8.56	8.56	7.33	6.5	7.33	7.33	7.33
at Weight	* 20600	* 35000	35000	43000	34500	19150	15700	9800
n x w	154500	300000	300000	315000	228000	140500	115000	71800
** Gross T.O. Weight	26971	48000	47000	51677	46426	26502	26152	15122
n at T.O.	5.75	6.25	6.37	6.12	4.92	5.3	4.4	4.78
n at 60% Fuel	6.70	7.22	7.36	7.20	5.86	6.1	5.05	5.60
Max. V Clean	2+	2+	2+	1.7	2.25	2+	2+	1.5
Wing Loading at T.O.	100	124.5	122	113.5	96	135	133	88.6
*** Range (Naut. Miles)	600	700	600	900	1000	600	600	600
(High Alt. Cruise + 2 min. at S.L.)								
Total Fuel/Fuel Cons. at Mil. (hrs)	1.38	1.39	-	1.15	1.32	1.20	1.20	-
Maximum Thrust/T.O. Weight	.58	.54	.54	.64	.657	.59	.596	.476
Programme Cost Per Unit	1.60	2.60	2.80	1.95	2.80	1.60	-	1.24
Flyaway Cost Per Unit	1.15	2.07	2.27	1.50	2.25	1.15	-	1.00

* Assumed Combat Weight - Actual figures not available.

** Gross T.O. Weight includes internal + external fuel + Store (Sidewinders not included in weight or performance)

*** Figures are approximate only and subject to error.

GRUMMAN F11F-1F



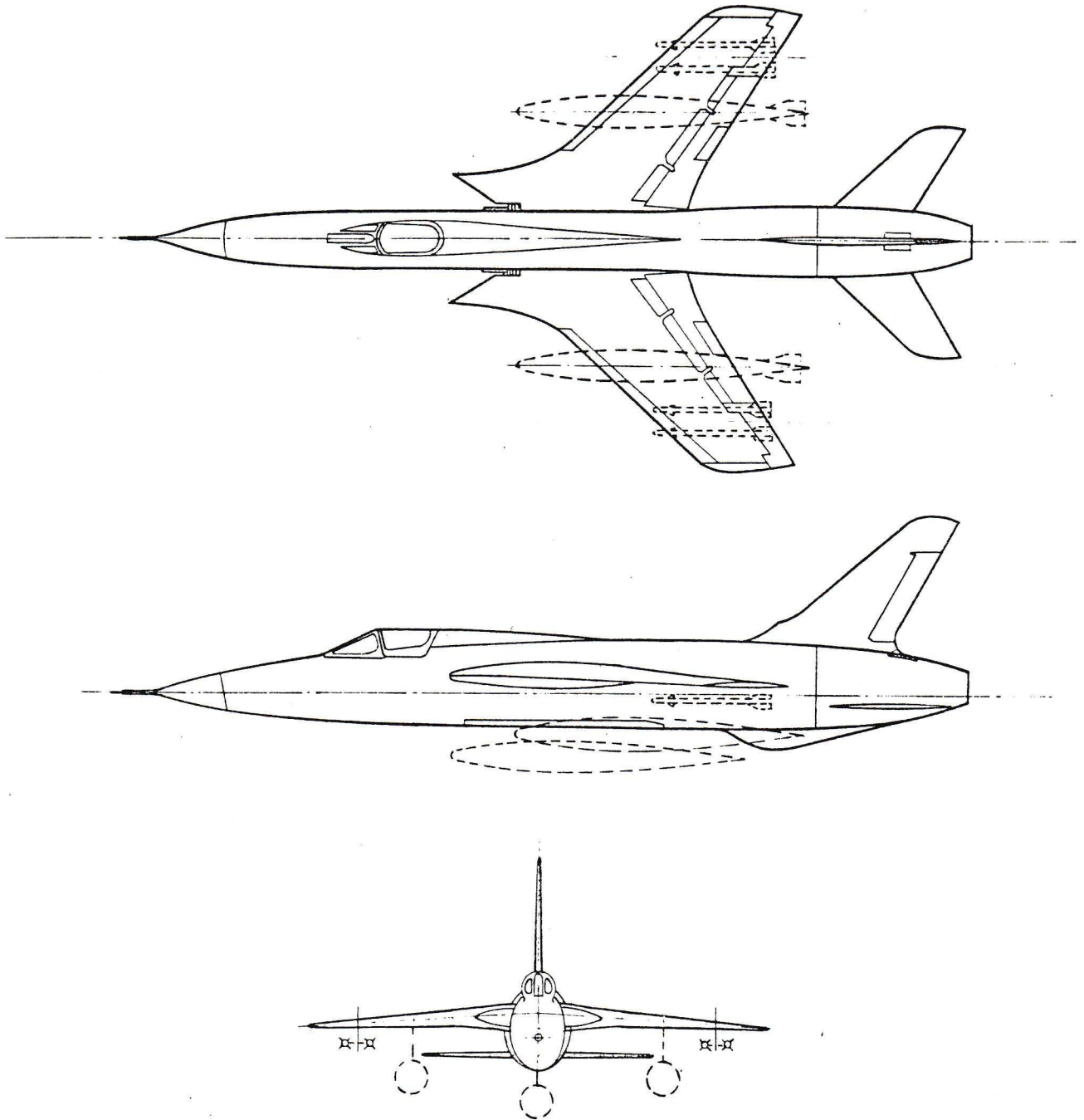
DIMENSIONS

Wing Span	31' - 7.5"
Overall Length	49' - 9"
Height	14' - 5"
Tailplane Span	15' - 7.5"
Tread	7' - 1"
Total Wing Area	269.7 sq. ft.
Wing t/c	6.5%

WEIGHTS

Empty Weight	15,376 lb.
Max. Gross Weight	23,466 lb.
AMPR Weight	10,809 lb.

REPUBLIC F-105 D



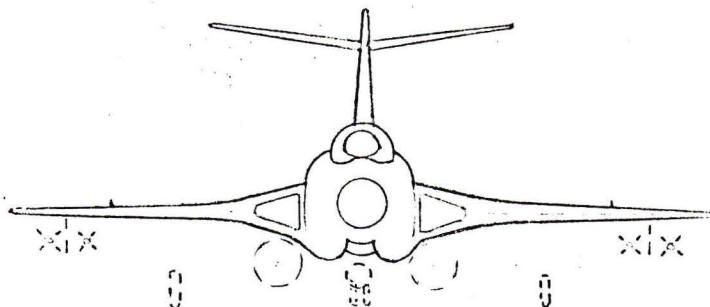
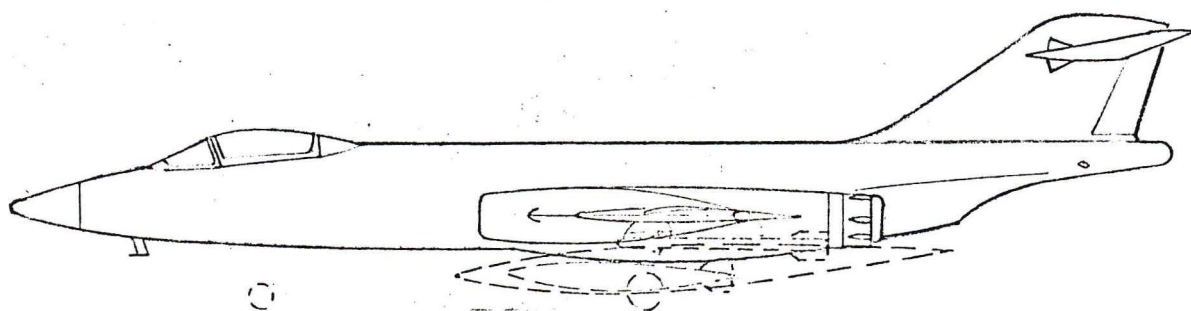
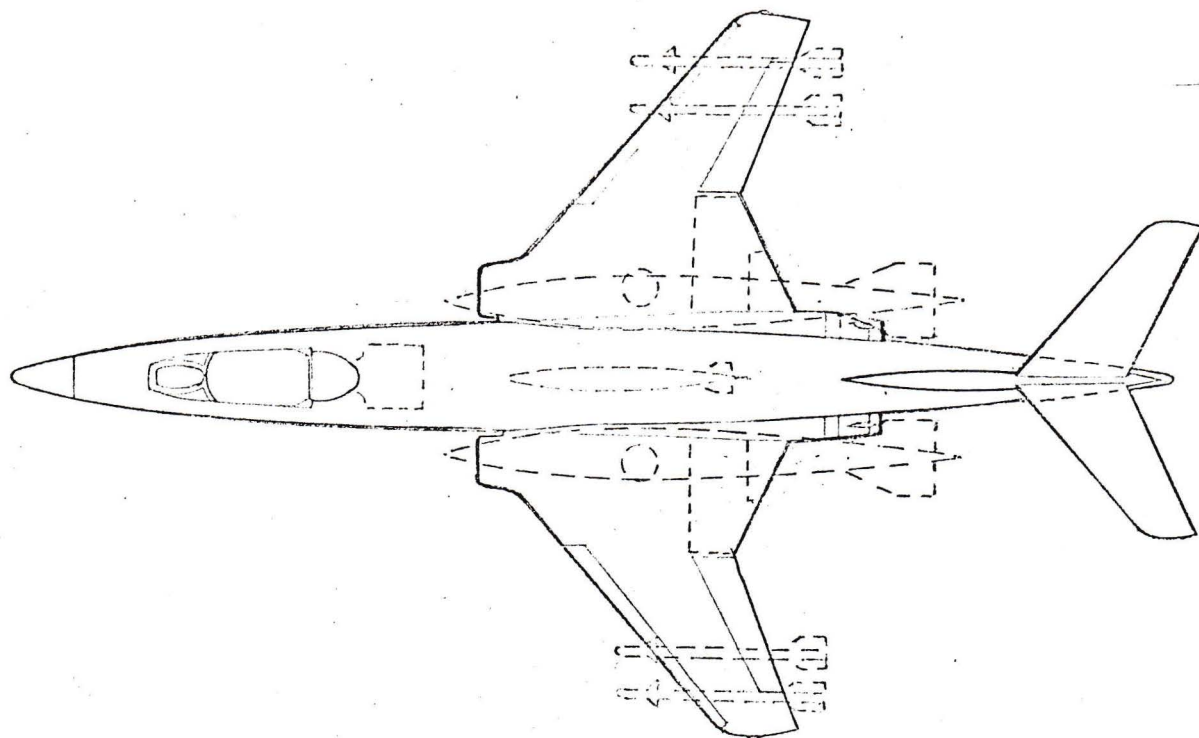
DIMENSIONS

Wing Span	34' - 11.2"
Overall Length	64' - 3.3"
Height	19' - 8.4"
Tread	17' - 2.6"
Total Wing Area	385 sq. ft.
Wing t/c	5.5%

WEIGHTS

Empty Weight	23,420 lb.
Max. Gross Weight	44,000 lb.
AMPR Weight	18,630 lb.

McDONNELL F101 Mk.2



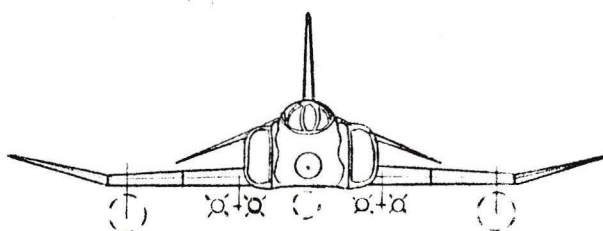
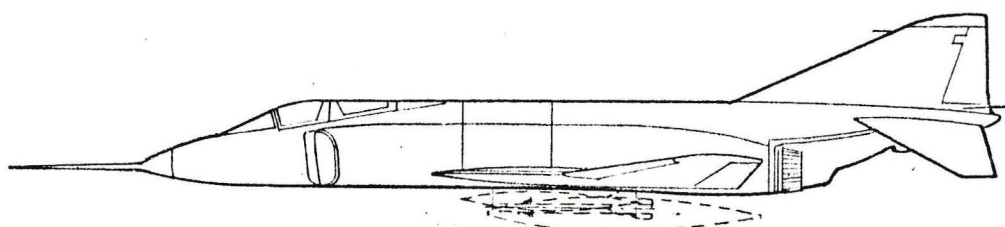
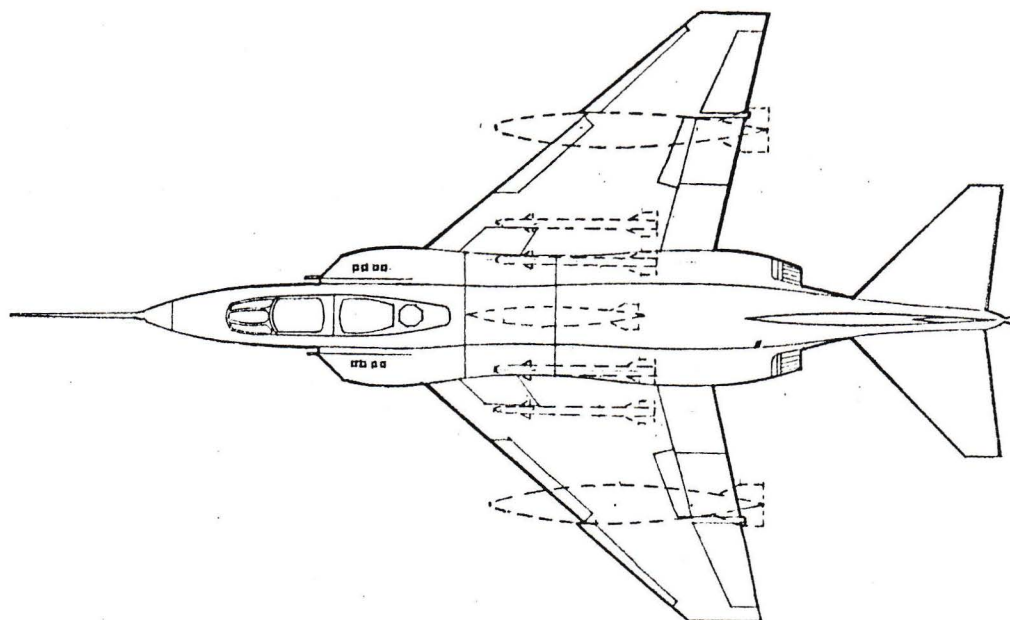
DIMENSIONS

Wing Span	39' - 8.3"
Overall Length	67' - 5.3"
Height	18'
Total Wing Area	368 sq. ft.
Wing t/c	5.1%

WEIGHTS

Empty Weight	29,000 lb.
Max. Gross Weight	56,000 lb.
A M P R Weight	15,400 lb.

McDONNELL F4H



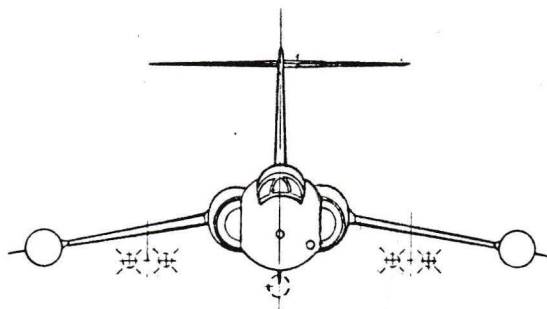
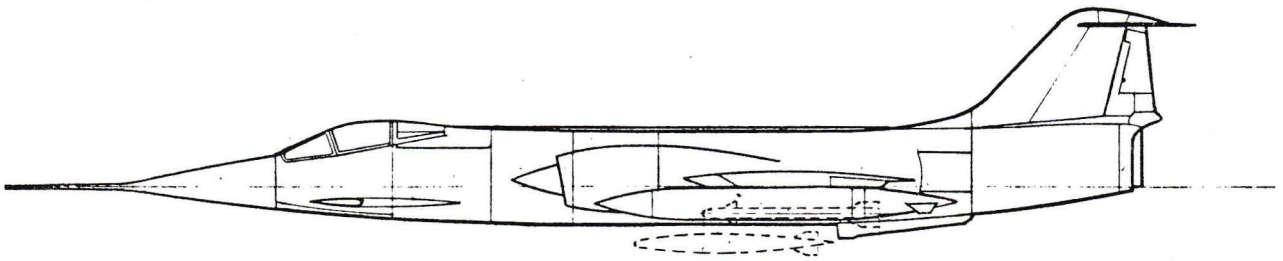
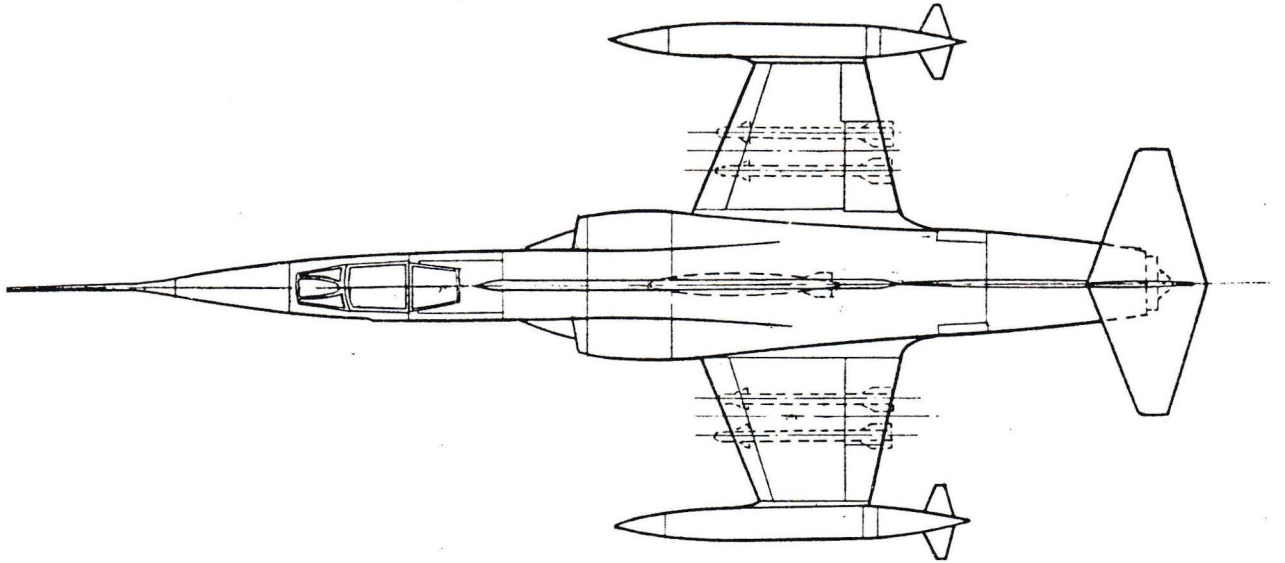
DIMENSIONS

Wing Span	38' - 5"
Overall Length	56'
Total Wing Area	479 sq. ft.

WEIGHTS

Empty Weight	25,316 lb.
Max. Gross Weight	40,000 lb.
AMPR Weight	15,300 lb.

LOCKHEED F-104



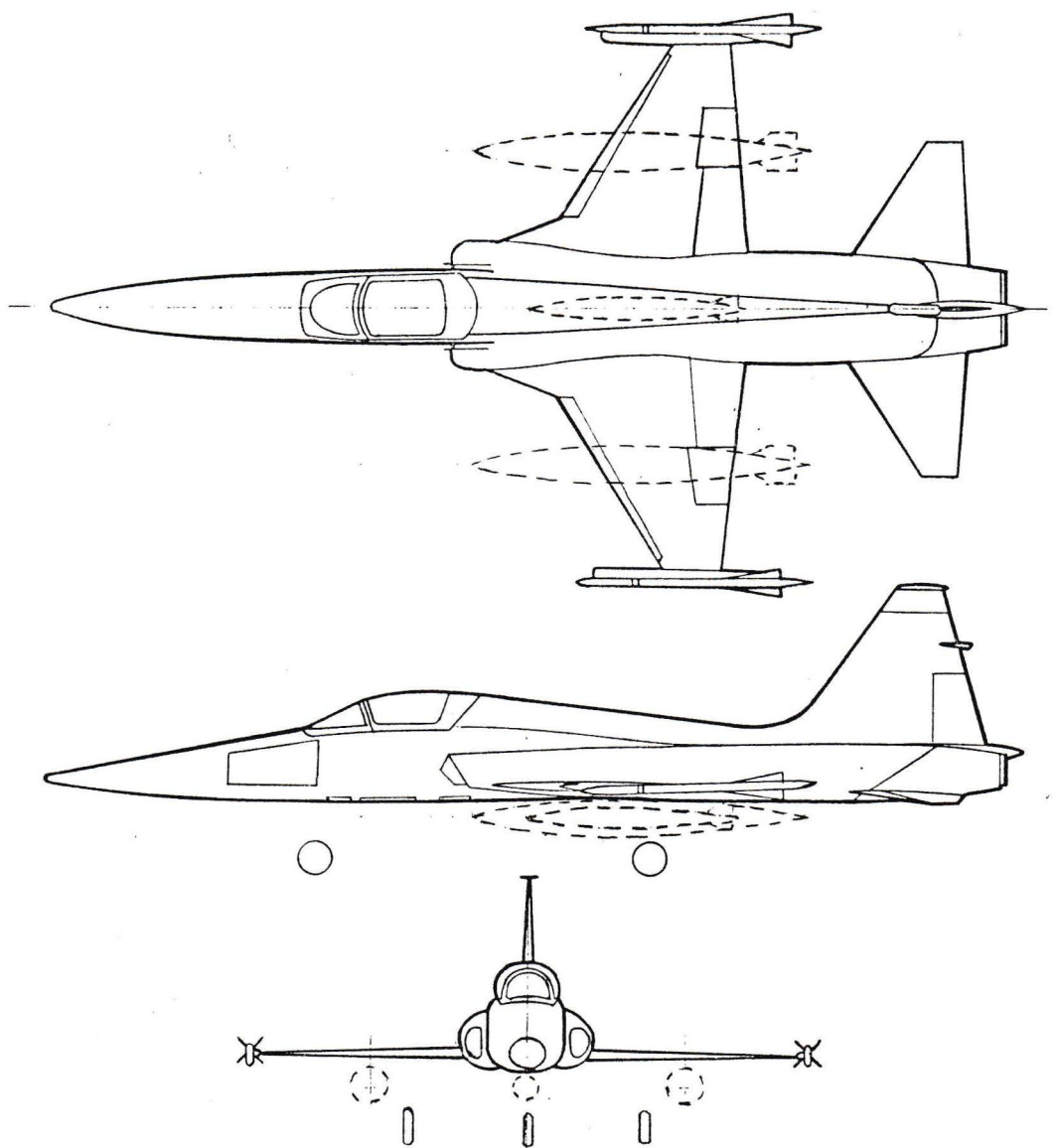
DIMENSIONS

Wing Span	21' - 11"
Overall Length	54' - 9"
Height	13' - 6"
Tailplane Span	11' - 11"
Tread	8' - 9"
Total Wing Area	196 sq. ft.
Wing t/c	3.36 %

WEIGHTS

Empty Weight	14,500 lb.
Max. Gross Weight	28,800 lb.
AMPR Weight	9,300 lb.

NORTHROP N-156F



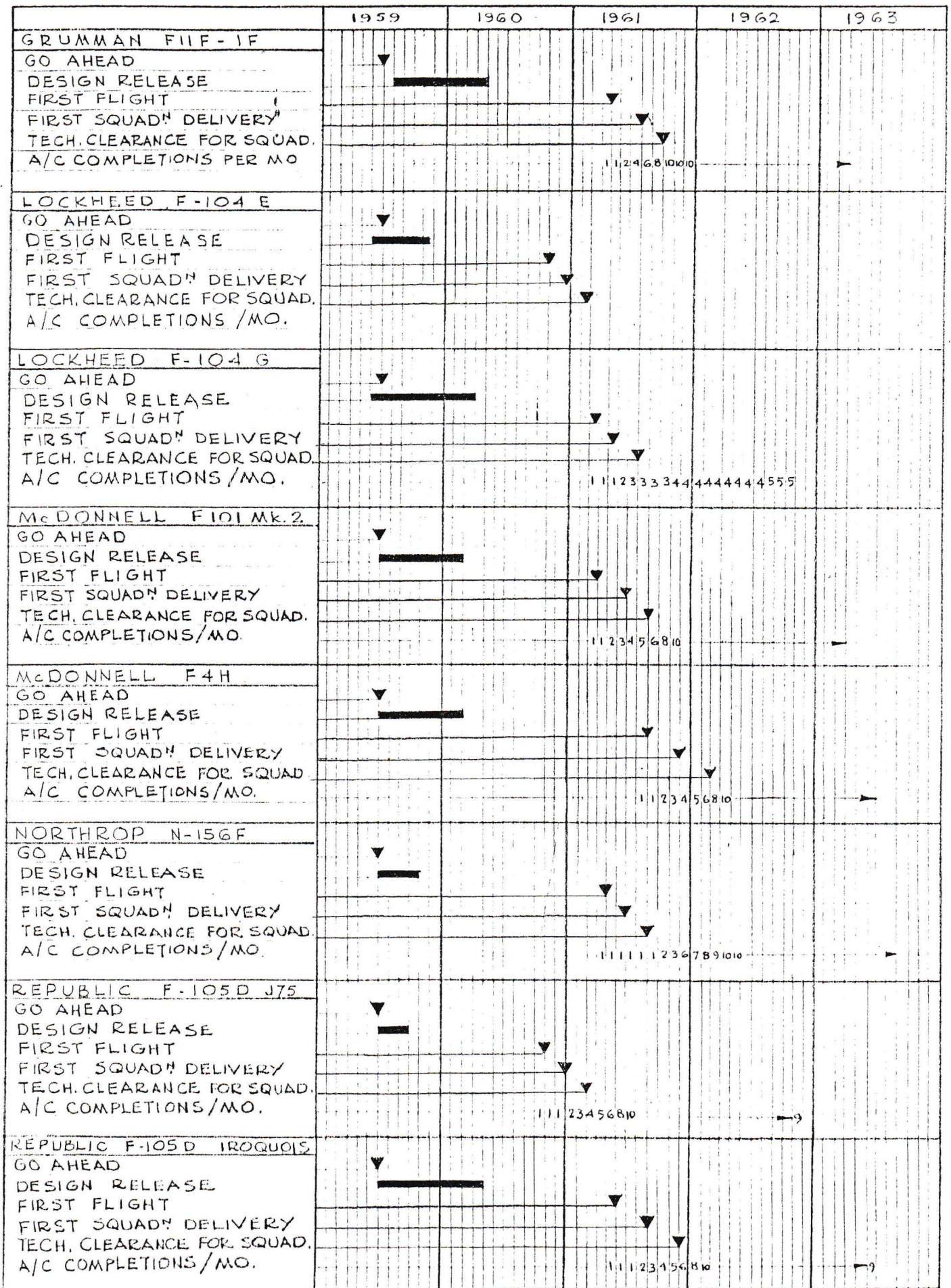
DIMENSIONS

Wing Span	25'
Overall Length	41' - 7.5"
Height	13'
Total Wing Area	170 sq. ft.
Wing t/c	3.75%

WEIGHTS

Empty Weight	7,529 lb.
Max. Gross Weight	15,282 lb.
AMP R Weight	5,354 lb.

MASTER PHASING SUMMARY



BRIEF PROGRAMME EVALUATION.

Grumman F11F-1F.

1. Large Development Costs for:-

- (a) NASSAR installation
- (b) Navigational equipment installation.
- (c) Structural strength increase.
- (d) New engine
- (e) Increased flight envelope.
- (f) Armament mounts.

2. Since development is in parallel with production there is a possible high cost of mandatory changes.

3. Programme not funded by any airforce.

4. Production sharing not likely.

5. Low production costs due to low AMPR Weight.

Republic F105 D.

1. Programme funded by U.S.A.F.

Only aircraft specifically designed and funded by U.S.A.F. for the tactical role.

2. Good production sharing plans.

3. High production costs due to complexity and high AMPR Weight.

McDonnell F101 Mk. 2.

1. Small development costs for:-

- (a) NASSAR installation.
- (b) Navigational equipment installation.
- (c) Armament pylons.

McDonnell F101 Mk. 2. Cont'd.

2. Good production sharing plans.
3. Relatively low cost for such a large aircraft.
4. Several versions in service with U.S.A.F.

McDonnell F4H.

1. Small development costs for:-
 - (a) NASSAR installation.
 - (b) Navigational equipment installation.
 - (c) Armament pylons.
2. Good production sharing plans.
3. High cost.

Lockheed F104 G.

1. Large development Costs for:-
 - (a) NASSAR installation.
 - (b) Navigational equipment installation.
 - (c) Structural strength increase.
2. Developments funds would be shared by Germans.
3. Since development is in parallel with production the cost of changes in production will be high.
4. No production sharing plan worked out.
5. Low production costs due to low AMPR Weight and excellent detail design for production.

A large portion of the development costs arises out of the requirement for increased structural strength. Significant cost and the time reduction could be effected by accepting the structural strength of the F104C aircraft, as well as reducing development cost it would also reduce the the number of changes required during the production programme.

Northrop N-156 F.

1. Development costs largely funded by U.S.A.F., but funding past a certain point appears precarious. Particular requirements of RCAF would require funding.
2. Since development is in parallel with production the cost of changes in production will be high.
3. Significant technical risk - a decision to go ahead would have to be made before the aircraft has been able to demonstrate its ability.
4. Good production sharing plans.
5. Low cost due to low A.M.P.R. Weight.

EQUIPMENT LIST FOR RCAF STRIKE AIRCRAFT.

1. NASSAR X R22A
2. TAB (Thunderstick GE)
3. G.E. Missile Launch computer for Sidewinder.
4. Bullpup controls - G. Martin.
5. TX-28 - Special Weapon Controls.
6. Thunderstick sight head.
7. Projected display (windshield) of NASSAR (Possibly Out).
8. ARC 552 (ARC 52)
9. AEN-46H - TACAN instead of ARN21.
10. UHF-DF DF301 - Collins instead of ARA-25.
11. IFF - SIF APX 25 A.
12. A-81 instead of AIC-10 Aindra Co.
13. Voice tape recorder AR-102 Ampex Co.
14. APH 501-Doppler (Can. Marconi (28 x 18) being used by 707.
15. FC-8 AFCS-GE - pitch hold, heading hold, co-ord turns + simple
method for changing.
16. CADC MC-1A (Bendix)
17. VHRs - Vert Head Ref. System 2171 H By Lear two gyro all altitude stable
platform.
18. PHI - III B instead of bearing and distance read out accepts Doppler and
TACAN inputs (C.D.C.)
19. AH Indicator Lear 4060 (Lear)