Rigid Pavement Design

FAARFIELD 1.305 Hands-On Training

Federal Aviation Administration

Presented to: X ALACPA Seminar on Airport Pavements
Ciudad de México, México

By: David R. Brill, P.E., Ph.D.

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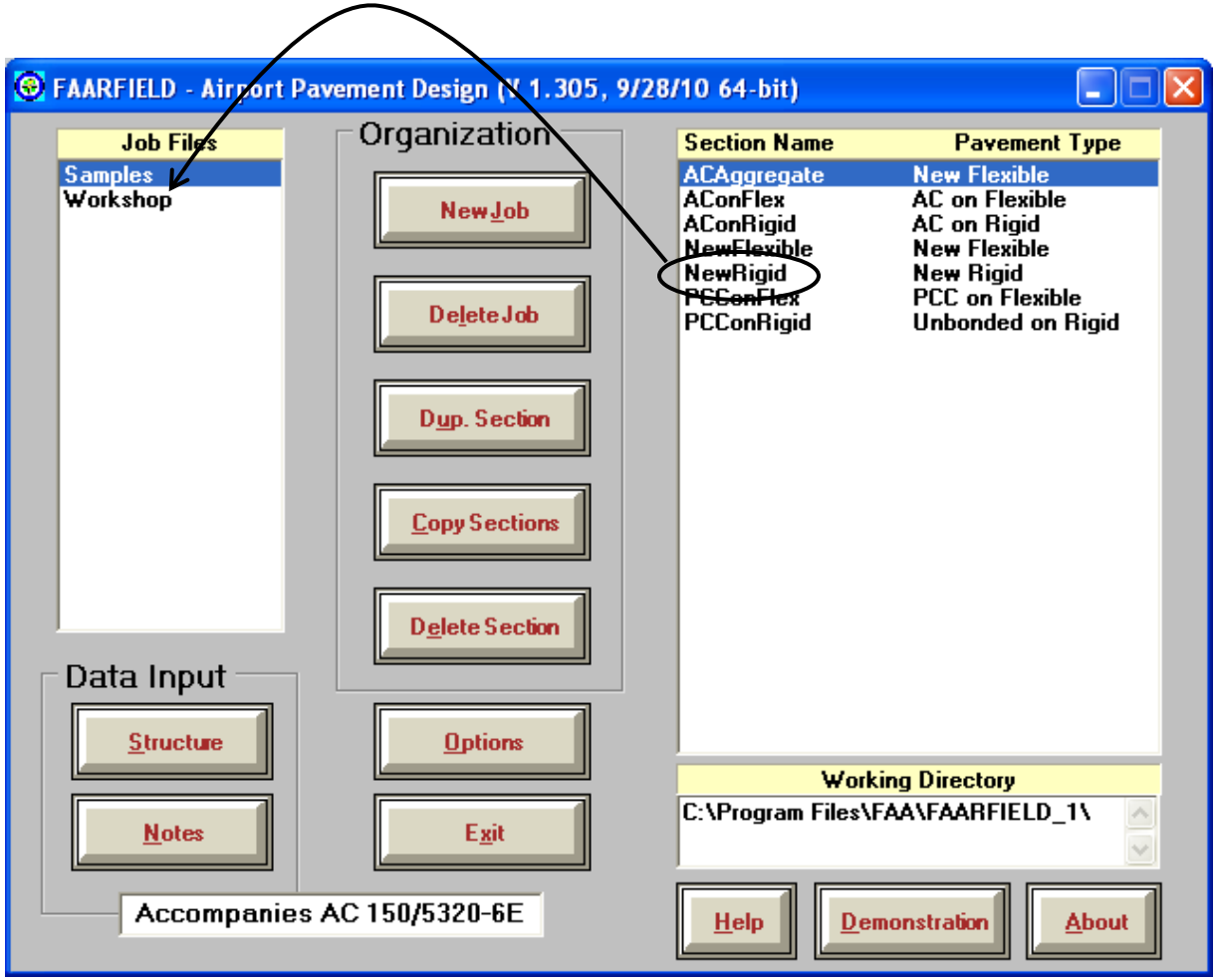
New Rigid Example Set-Up

Create a new section in job WORKSHOP by dragging section NewRigid in Samples to WORKSHOP.

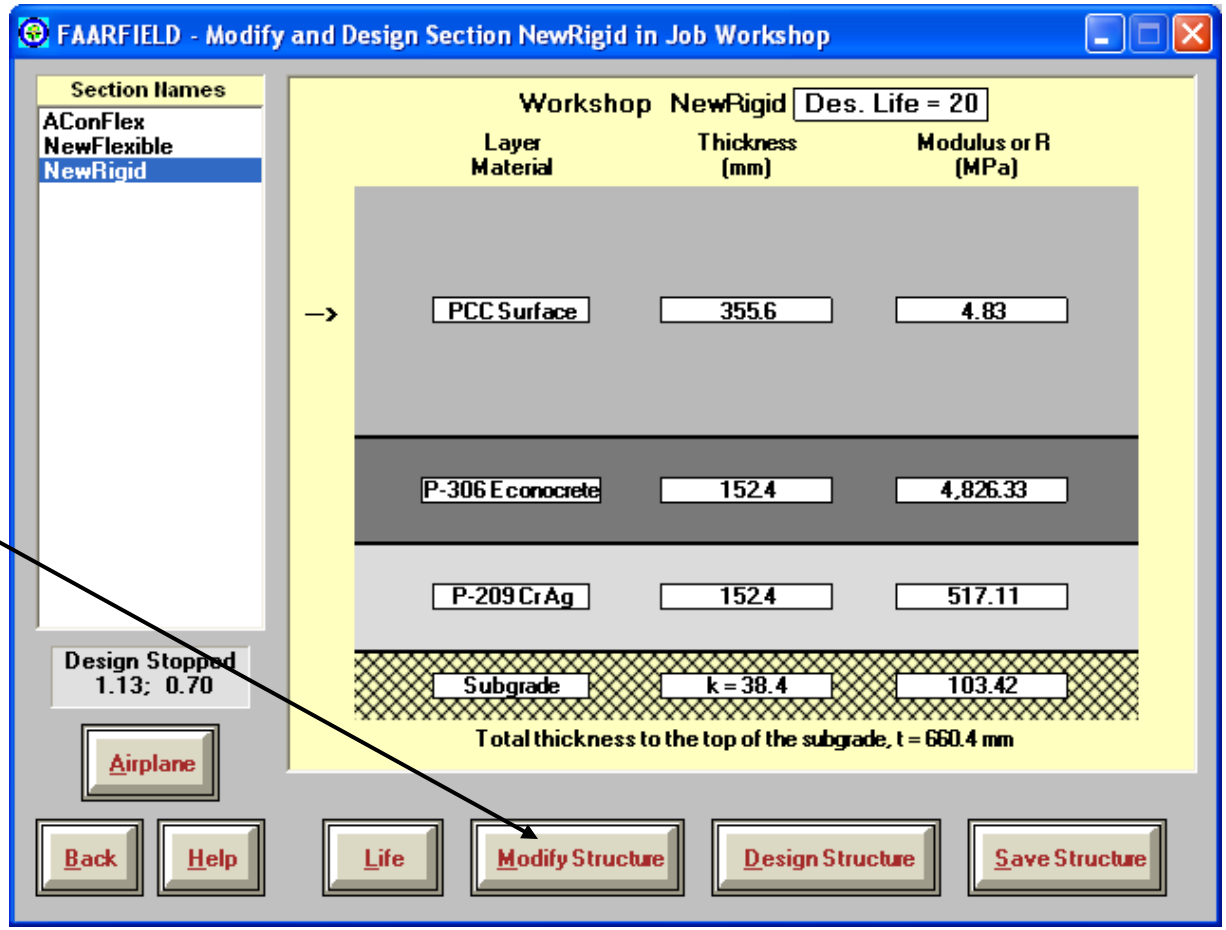


New Rigid Pavement Design Example

- **Pavement Structure:**
  - PCC Slab, P-501, R = 4.85 MPa psi
  - Cement-Treated Base, P-304, 150 mm thick
  - Crushed Aggregate Base, P-209, 200 mm thick
  - Subgrade *k* = 27 MPa/m
- **Traffic Mix:**
  - 10-Aircraft Mix includes B777, A340, A380
  - Found in job file: *Workshop.JOB.xml*

Change Pavement Structure

In Structure window, click on Modify Structure



Change Pavement Structure

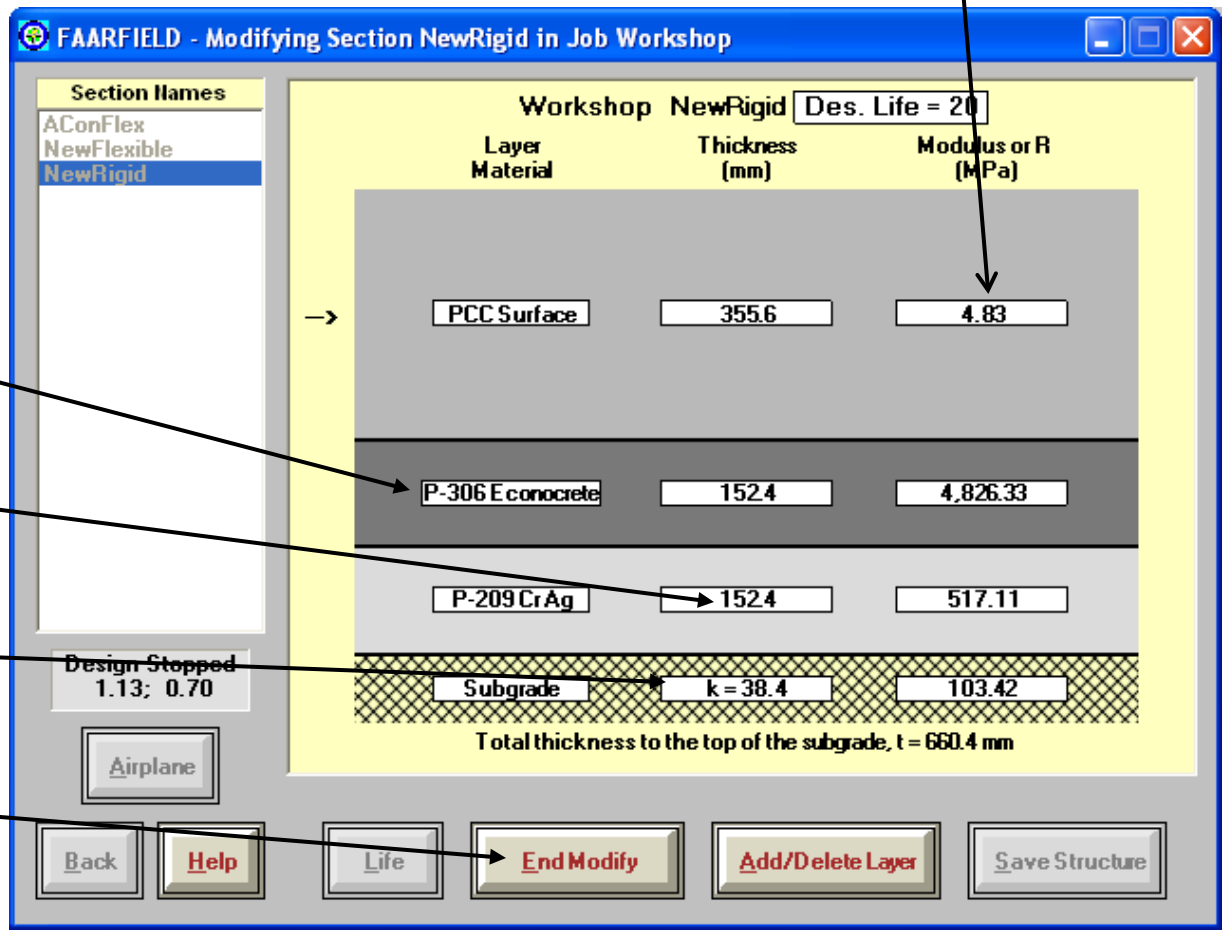
Change R to 4.85 MPa

Change base layer to 150 mm CTB, P-304

Change P-209 layer thickness to 200 mm.

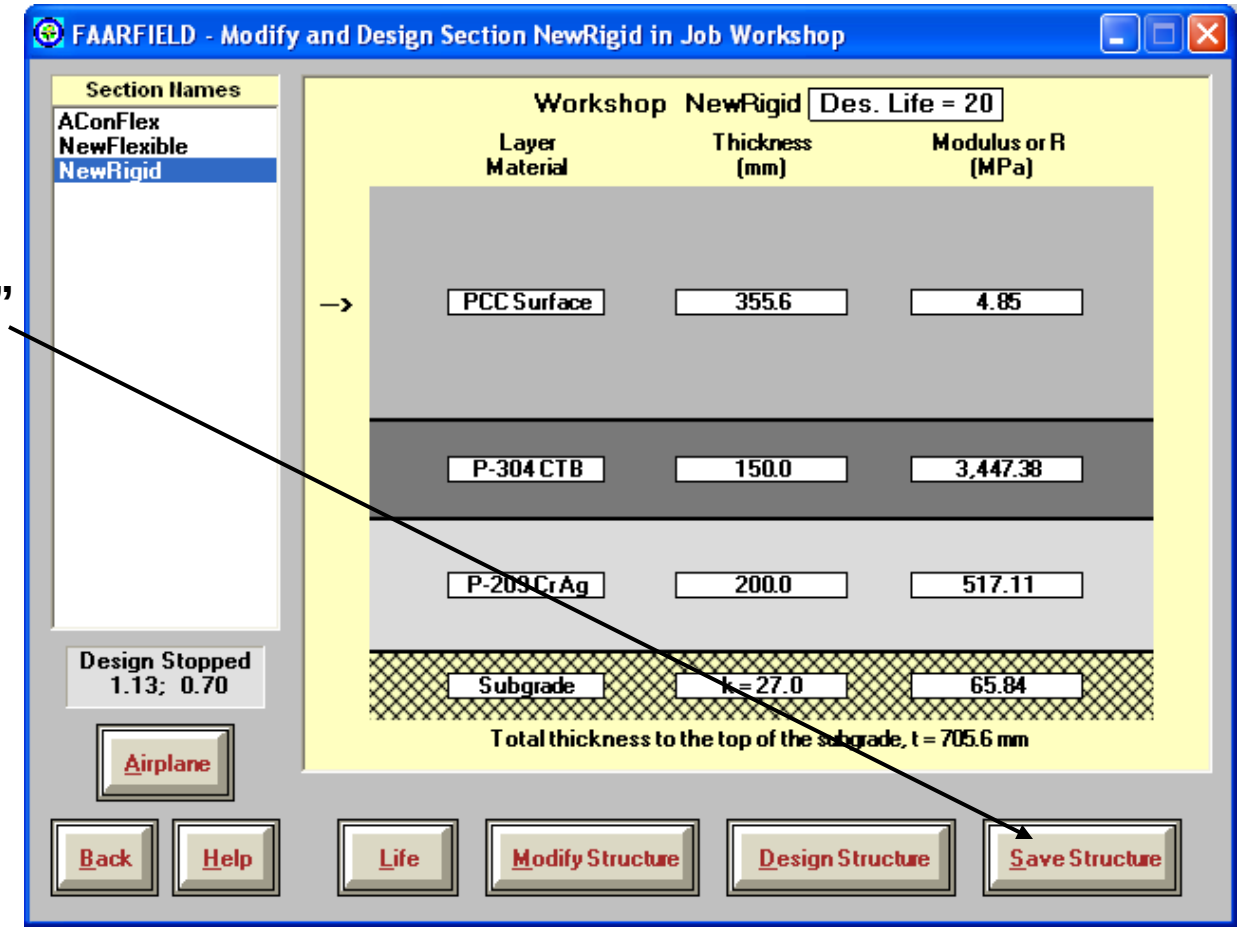
Change subgrade *k* to 27 Mpa/m

Click "End Modify"



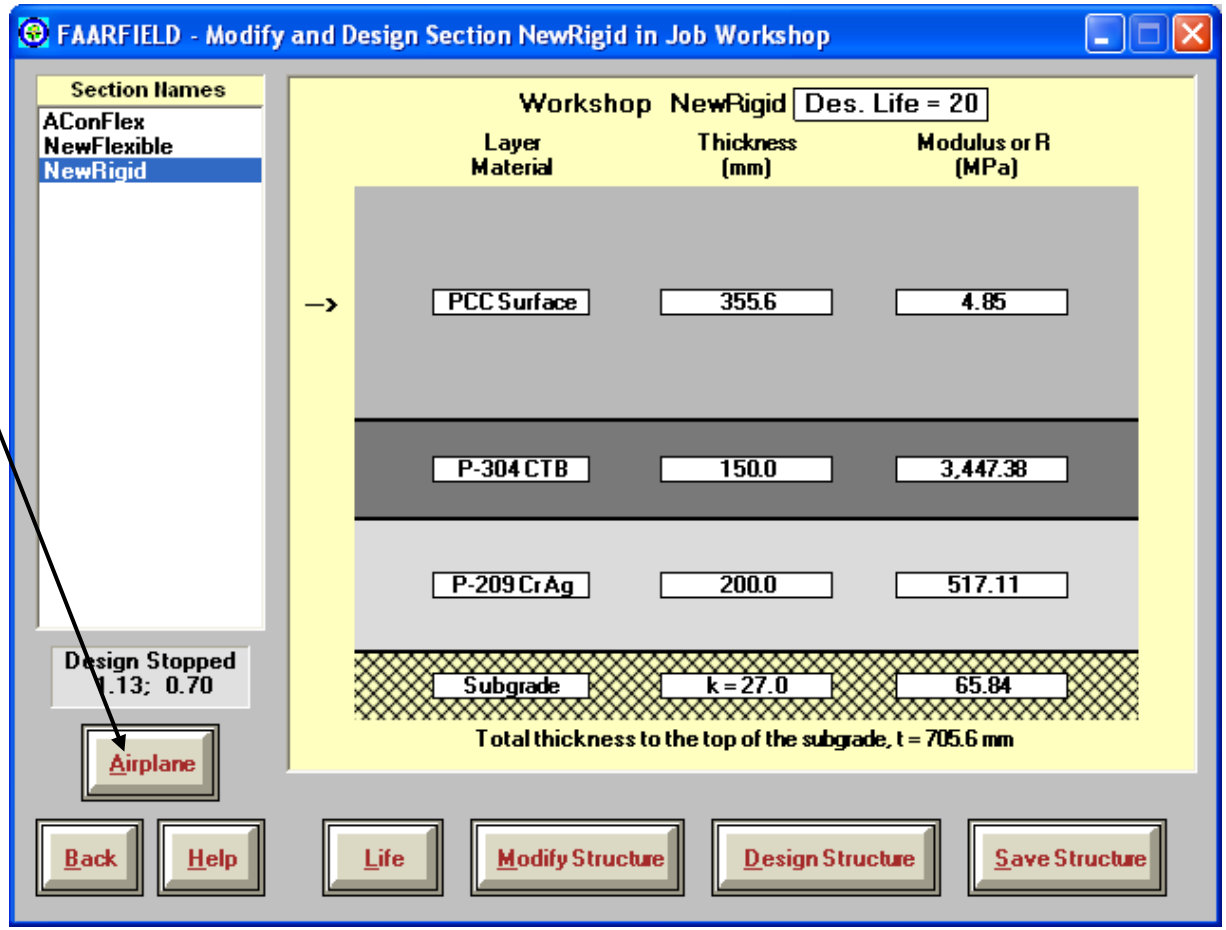
Change Pavement Structure

Click “Save Structure”



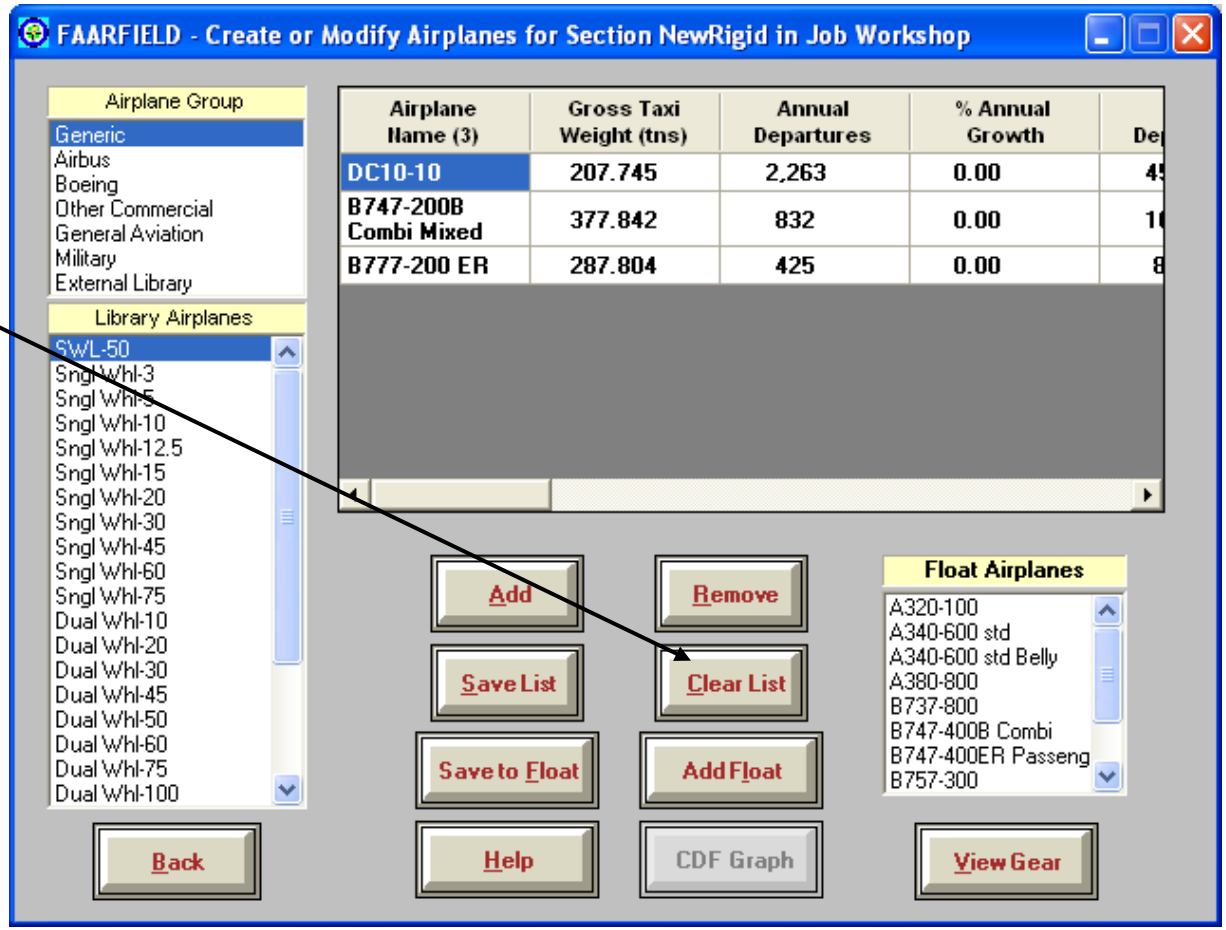
Enter Traffic Mixture

Click on "Airplane" to enter traffic mix



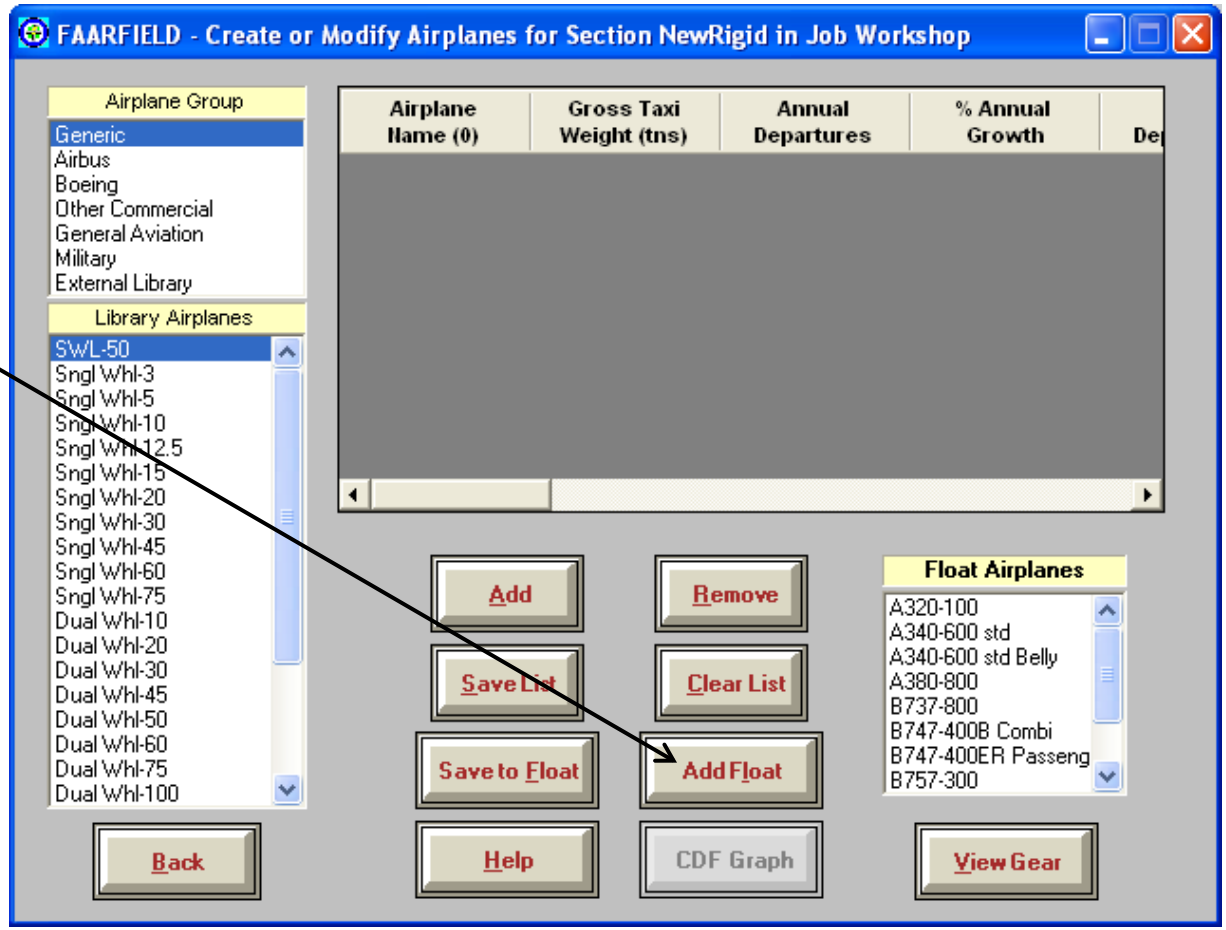
Enter Traffic Mixture

Use “Clear List” to clear the existing airplanes



Enter Traffic Mixture

Click on "Add Float" to add the float airplanes to the traffic list.



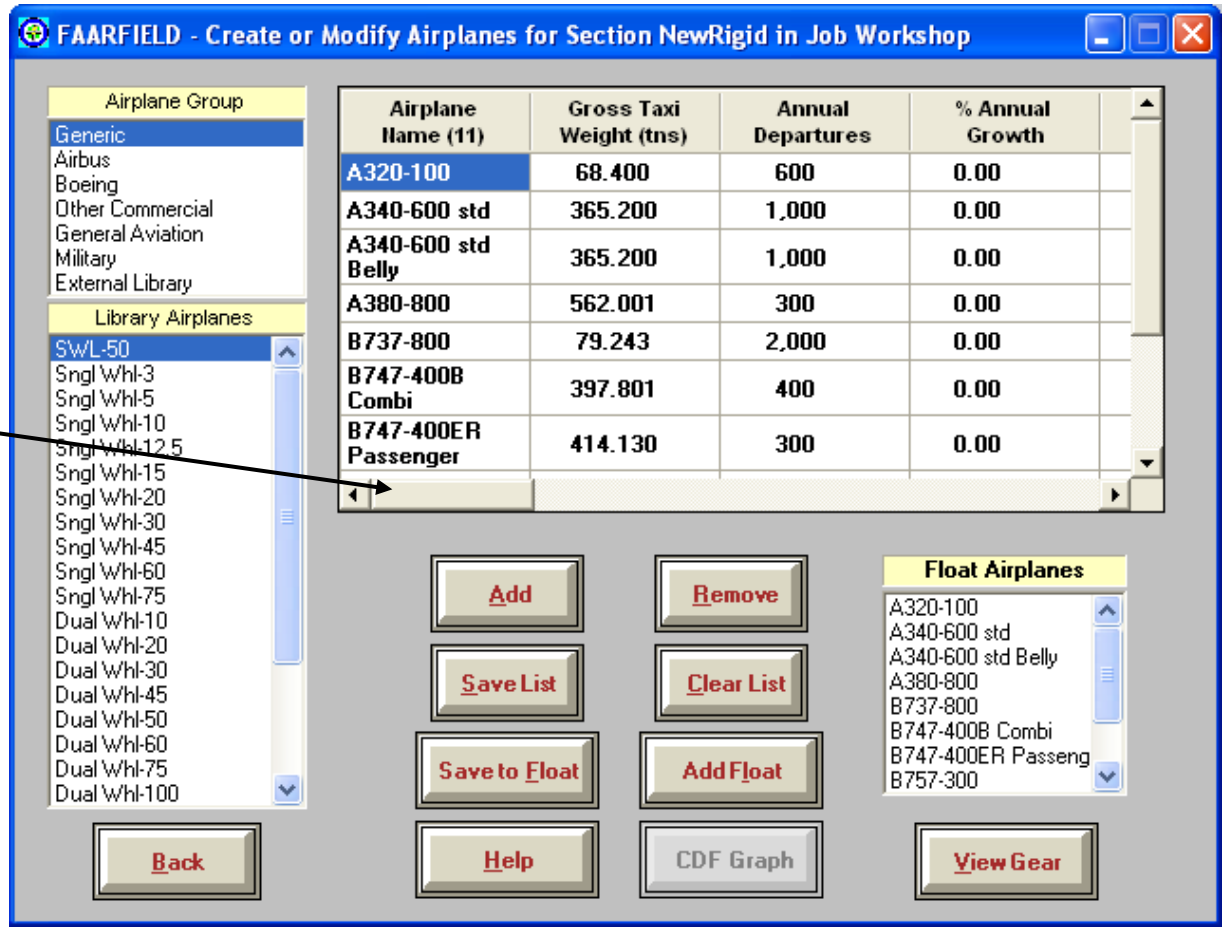
Traffic Mix for This Example

(same as flexible design example)

No.	Name	Gross Wt., tns.	Annual Departures	Annual Growth, %
1	A320-100	68.400	600	0.00
2	A340-600 std	365.200	1,000	0.00
3	A340-600 std Belly	365.200	1,000	0.00
4	A380-800	562.001	300	0.00
5	B737-800	79.243	2,000	0.00
6	B747-400B Combi	397.801	400	0.00
7	B747-400 ER Pass.	414.130	300	0.00
8	B757-300	124.058	1,200	0.00
9	B767-400 ER	204.570	800	0.00
10	B777-300 ER	352.441	1,000	0.00
11	B787-8 (Preliminary)	220.446	600	0.00

Viewing Airplane Information

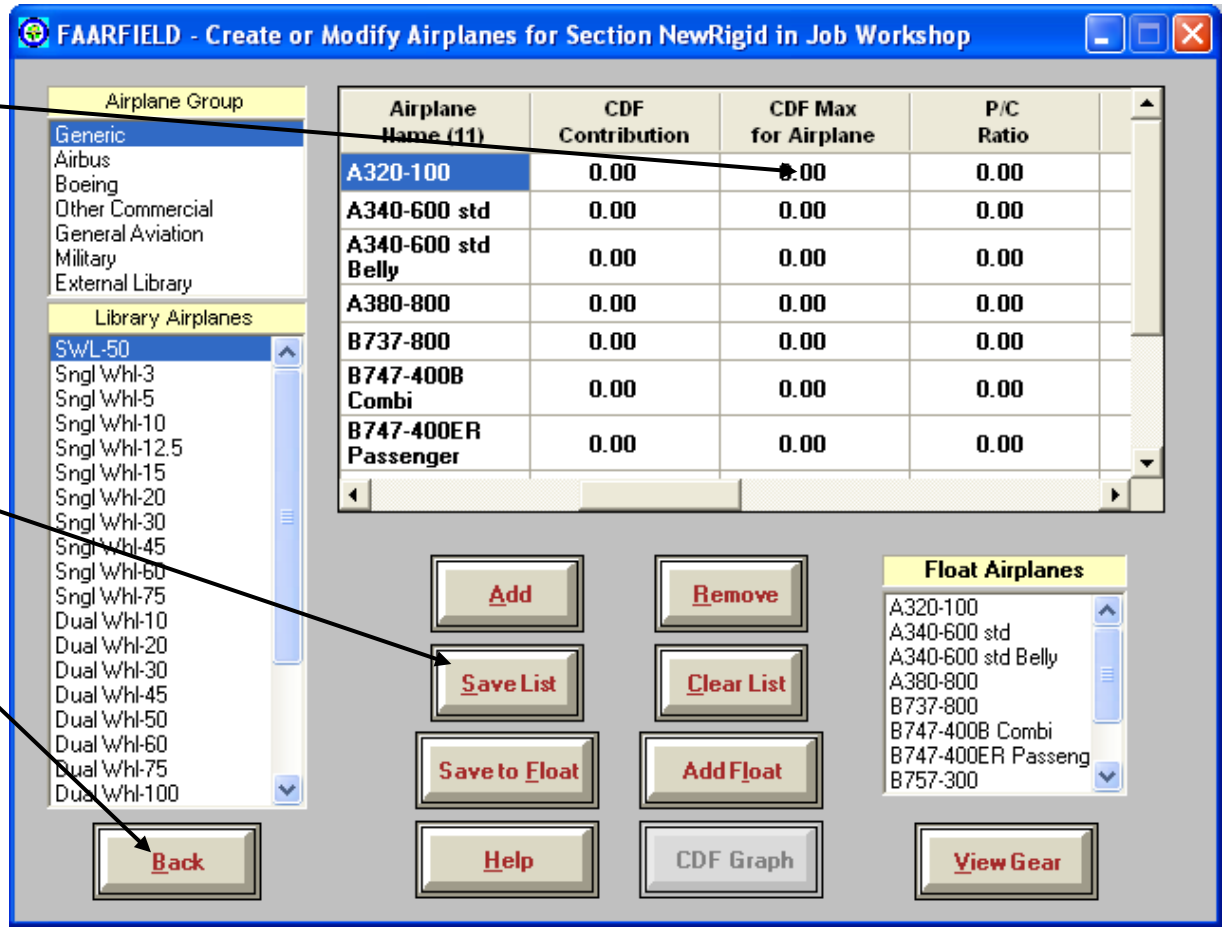
Scroll over to reveal additional columns of information.



Viewing Airplane Information

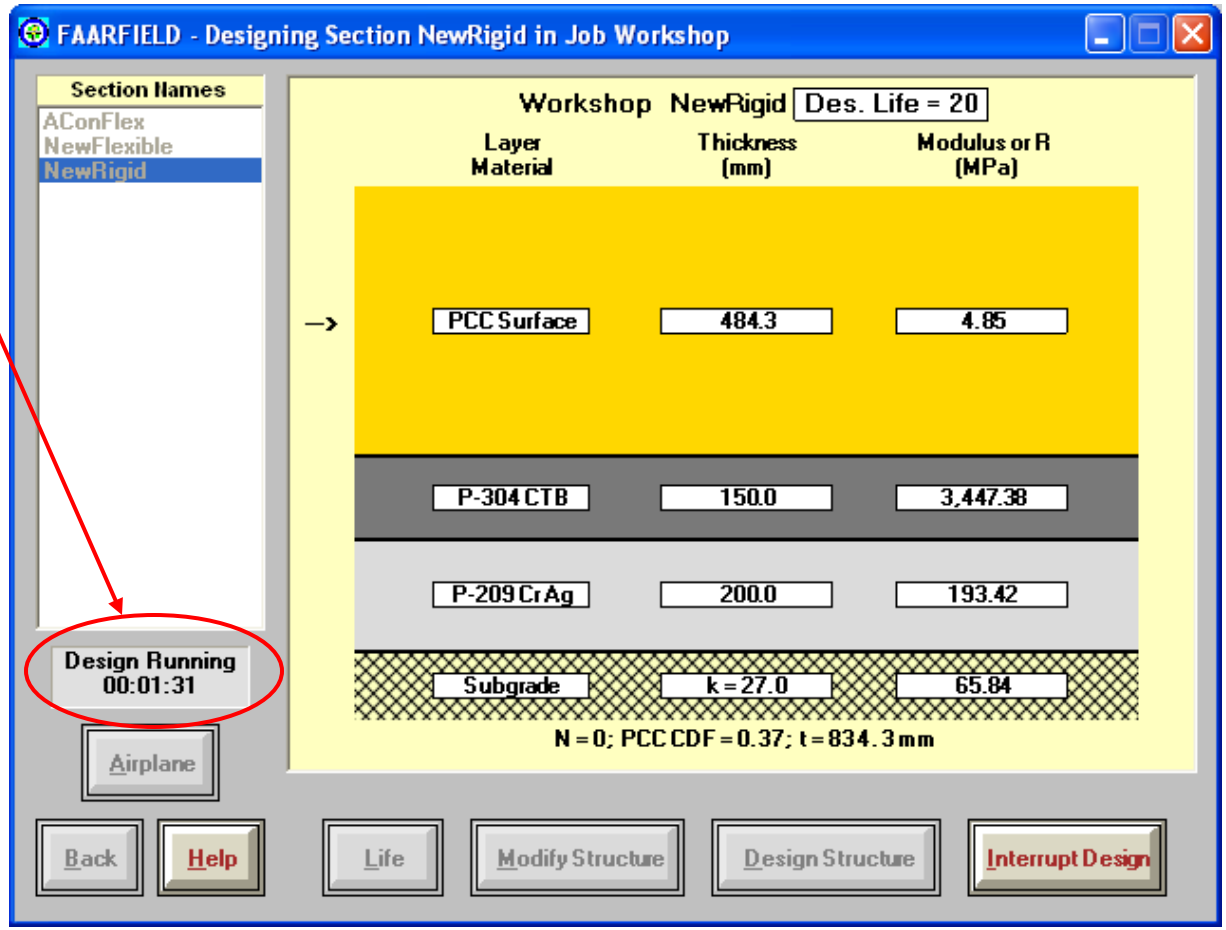
Values in CDF and P/C ratio columns will be zero when airplanes are first entered.

Save the list when finished entering, then click the Back button.



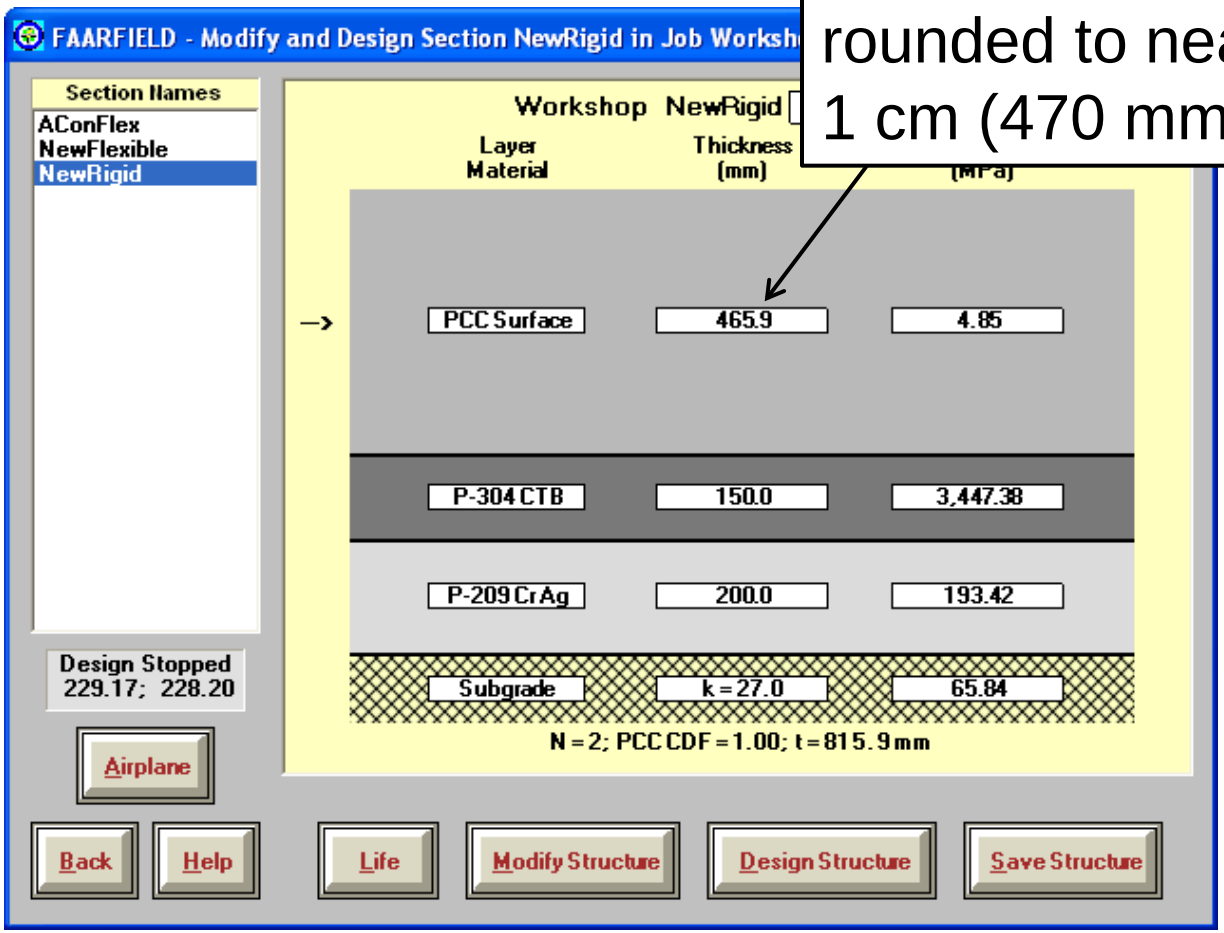
Run Design

- During the design process, the “Design Running” clock will appear.
- For rigid designs, the design will normally take a few minutes. Don’t interrupt the process.
- The screen display will change with each iteration.



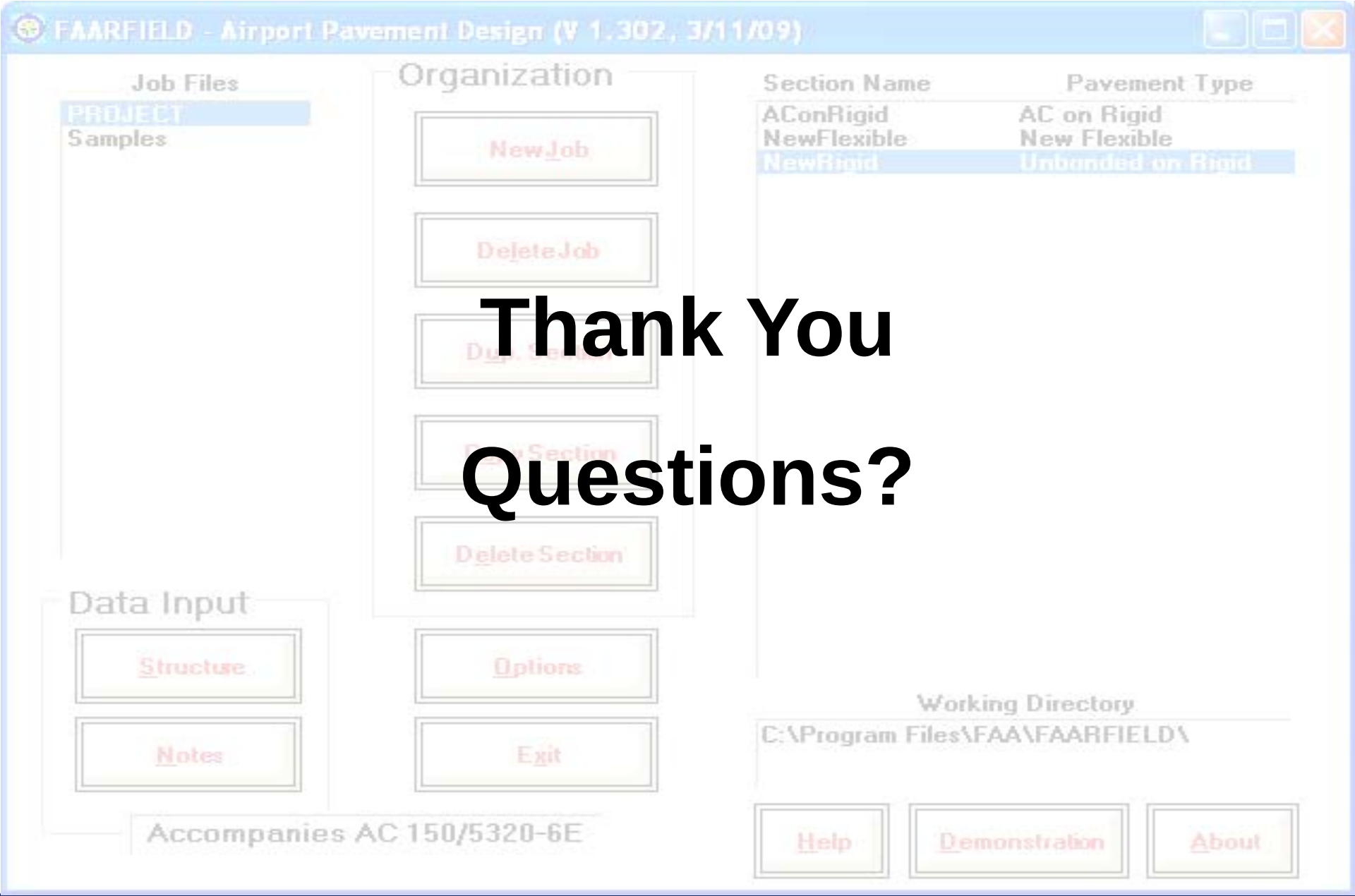
New Rigid Pavement - Final Design

Thickness should be rounded to nearest 1 cm (470 mm).



CDF Contribution

No.	Name	CDF Contribution	CDF Max for Aircraft	P/C Ratio
1	A320-100	0.00	0.00	3.84
2	A340-600 std	0.24	0.24	1.91
3	A340-600 std Belly	0.00	0.14	2.47
4	A380-800	0.01	0.01	3.61
5	B737-800	0.00	0.01	3.52
6	B747-400 Combi	0.02	0.02	3.46
7	B747-400 ER Passenger	0.04	0.04	3.62
8	B757-300	0.00	0.00	3.95
9	B767-400 ER	0.06	0.07	3.65
10	B777-300 ER	0.59	0.59	3.86
11	B787-8 (Preliminary)	0.04	0.05	3.78



Thank You

Questions?