

United States Military Academy
West Point, New York 10096

**Pro Forma:
Force Structure Costing Model
U.S. Army Budget Office**

Major James L. Watson, Jr.

OPERATIONS RESEARCH CENTER
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1. INTRODUCTION

During these years of downsizing in the U.S. Armed Forces, the allocation of resource dollars has become an increasingly more difficult task. As can be seen in the following graphs of the Total Obligational Authority and the Soldier End Strengths of the Army there has been a downward trend in both.

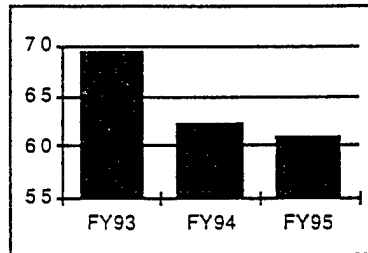


Figure 1.1. Total Obligational Authority Summary (\$ in Billions, Constant FY95 Dollars)

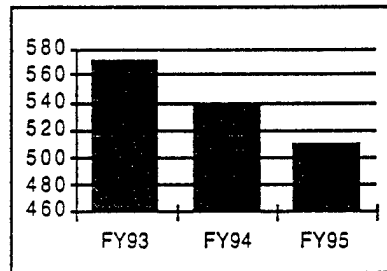


Figure 1.2. U.S. Army Soldier End Strengths (000'S)

The savings of OMA dollars gained through the reduction of soldier end strength has gained increased emphasis with the end of the Cold War and the Gulf War. Consequently, the senior leadership of the Army tasks the Army Budget Office (ABO) with providing forecasts of the savings associated with future end strength reductions.

While there are functional offices for each of the main budget activities in the ABO, the Integration Branch is usually held responsible to prepare solutions to various questions from senior leaders regarding the budget and expenditures. The Pro Forma model provides the Integration Branch of the ABO with a tool to conduct cost analysis of future changes in the force structure.

2. BACKGROUND

2.1 Previous Work

This report describes the efforts done in continuation of the ORCEN which developed the Force Structure Costing Model, Pro Forma, in FY91. This spreadsheet based model provides quick results to inquiries by the senior Army leadership regarding resource dollars savings that could be expected from force structure modifications. As an introduction to this model and the previous work done, readers are advised to look at ORCEN Technical Report No. FY92/90-2, entitled "Pro Forma: A Meta-Model for Force Structure Costing" by MAJ James P. Cummings.

Originally the intent of the Pro Forma model was to integrate the output of numerous other models that had been developed for the Army. As depicted in figure 2.1, this "Meta-model", or model of models, would provide a rapid interface for the user to the output of the other models. However, this concept proved to be a very time consuming process when there was a strong need to provide a model sooner. Thus, it was decided to approach the solution to the problem from a different perspective.

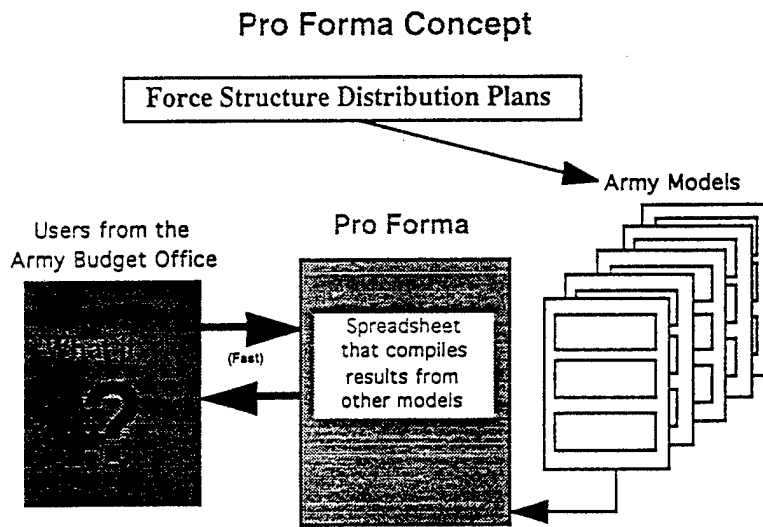


Figure 2.1. Initial Pro Forma Concept

Instead of attempting to integrate the output of numerous other models, it was decided to pursue a relationship between force structure and executed dollars from historical data. Several forecasting techniques were tried, including regression analysis of the data. However, what proved most practical was a cost factor-based model that used an average of three years of past data inflated to the forecast year.

Pro Forma Advantages

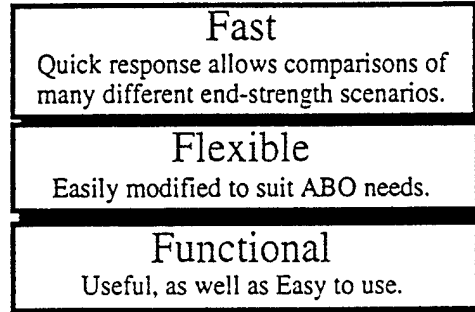


Figure 2.2. Pro Forma Model Characteristics

This approach provided "Ball-park", or "Stadium-metric" solutions to typical reductions of force structure. The model of this new approach was given the name Pro Forma, which is a business term that describes the process of creating a budget based on current expenditures. Figure 2.2 describes the important characteristics of the Pro Forma model.

2.2. Key Players:

The main customer of the Pro Forma model is the Integration Branch of the Operations and Support Directorate of the ABO, which is a part of the Office of the Assistant Secretary of the Army for Financial Management (ASAFM). It is the Integration Branch that produces the solution to questions from senior military officials. The model was initially requested in FY90 by MG Robles who was then the Director for Operations and Support. Currently, the model is used throughout the ASAFM.

3. ISSUES

The primary issues for improvement of the Pro Forma model during FY93 and FY94 included maintaining the cost factors and advancing the usefulness of the model. Since the cost factors are based upon the past three years of data, each year it is required that the next years data be included, and the four year old data be purged. The details on how to update the cost factors are located in Appendix C.

To improve the usefulness of the model the primary customers were heavily consulted. They required the capability to modify more than one Major Command (MACOM) Geographic area during a single run. In addition, they needed the capability to adjust the basic force structure plan prior to making proposed force structure modifications.

In June of 1993, the ORCEN briefed MG Robles, who was then the Director of the Army Budget (DAB). During that briefing he outlined several actions to improve the Pro Forma model. Soon after that briefing MG Howard replaced MG Robles as the DAB. With minor changes, MG Howard approved the action list. This action list is shown in figure 3.1 below.

8 Actions from MG Robles and MG Howard

- Coordinate the Pro Forma model with CEAC.
- The P2 Division should use the Pro Forma model.
- Reconfigure the Pro Forma model to the new "O-1 Management Structure".
- Provide an estimate on how many civilian spaces are tied to OMA savings.
- Include costs of VSI/SSB/SERB/Early Retirement and Unemployment
- Incorporate the Reserve Component MACOMs
- Capture the support (RETROEUR) costs associated with end strength reductions.
- After the above, then focus on capturing AMC, OSA, ... etc. dollars.

Table 3.1. Pro Forma Improvement Actions

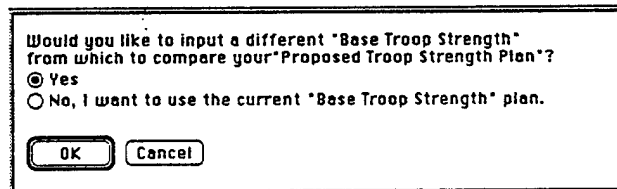
To comply with the objects outlined by the DABs, as well as enhance the usefulness of the model became the main objectives for the ORCEN. The balance of this report describes those tasks which were accomplished.

4. RESULTS

4.1. Model Improvements

The macro code which runs the dialog boxes that interact with the user was modified to incorporate the enhanced usefulness requested by the primary users. As mentioned above, these improvements included adding the ability to modify more than just one geographic area per run, as well as to adjust the base force structure from which to making proposed modifications. To demonstrate these enhancements, the initial dialog boxes of the model will be described.

The first choice the user makes when running the model is to decide whether to modify the total end strength of the Army as a whole; modify one MACOM area, changing the total end strength commensurably (i.e., changing the total Army end strength by changing the end strength from U.S. Army Southern Command (USARSO); or modify one MACOM area while maintaining the same total end strength (i.e., shifting forces from U.S. Army Europe (USAREUR) back to the Continental United States (CONUS)). For the purposes of this demonstration, it will be assumed that the user has made the second choice; modify one geographic area while also changing the total Army end strength as well. After this choice the user is presented with the dialog at figure 4.1, which is one of the improvements.



Would you like to input a different "Base Troop Strength" from which to compare your "Proposed Troop Strength Plan"?

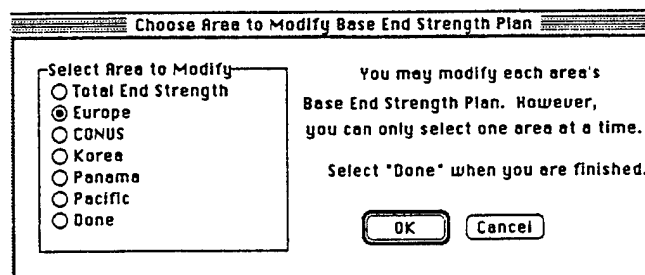
Yes

No, I want to use the current "Base Troop Strength" plan.

OK Cancel

Figure 4.1. Initial Dialog Box; Choose to Modify Base Troop Strength

If the user chooses "No, I want to use the standard troop strength plan" the model skips directly to the dialog box shown in figure 4.4. However, if the user desires to modify the base troop strength plan, choosing the second option, the dialog box shown in figure 4.2 is presented.



Choose Area to Modify Base End Strength Plan

Select Area to Modify

Total End Strength

Europe

CONUS

Korea

Panama

Pacific

Done

You may modify each area's Base End Strength Plan. However, you can only select one area at a time.

Select "Done" when you are finished.

OK Cancel

Figure 4.2. Choose Area to Modify Base Troop Strength

Using the dialog box shown in figure 4.2, the user can choose modify the total base end strength plan, or any of the MACOM geographic area base end strength plans. In this example the user has chosen to modify the base troop strength for Europe.

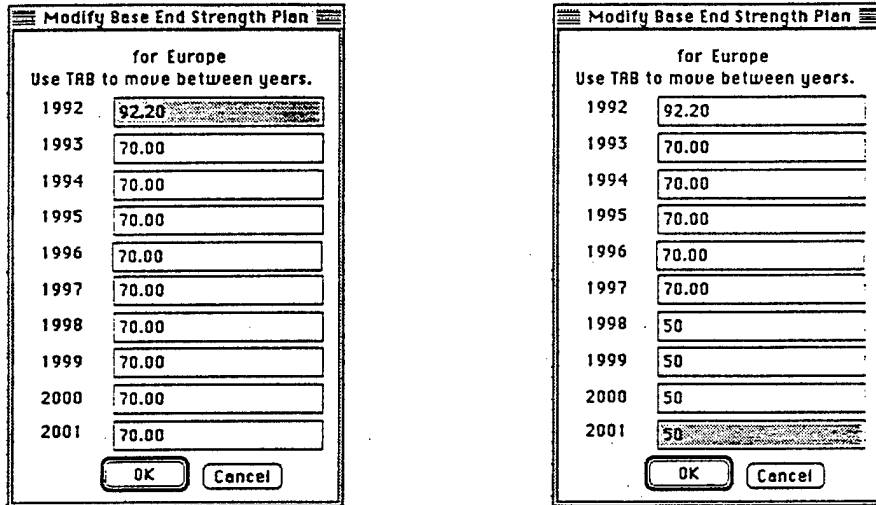


Figure 4.3. Before and After Dialog Boxes Used to Edit Base Troop Strength Plan

Using the dialog box shown in figure 4.3, the user can modify the base troop end strength. Figure 4.3 shows both the before and after use views which show a reduction in the base troop end strength from 70,000 to 50,000 soldiers for FY98-2001.

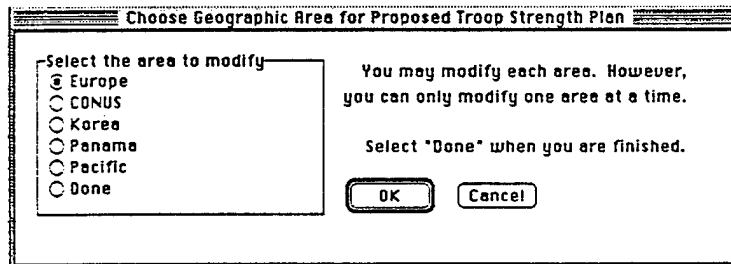


Figure 4.4. Dialog Box to Choose Geographic Area to Modify

After modifying the base troop strength plans, the user is then presented with the dialog box corresponding to the force structure reduction plan chosen in the initial dialog box of the model. As shown in figure 4.4, in this example the choice was to modify geographic areas, as well as to reduce the overall end strength. The user has the capability to modify all of the geographic areas. However, only one area at a time can be edited.

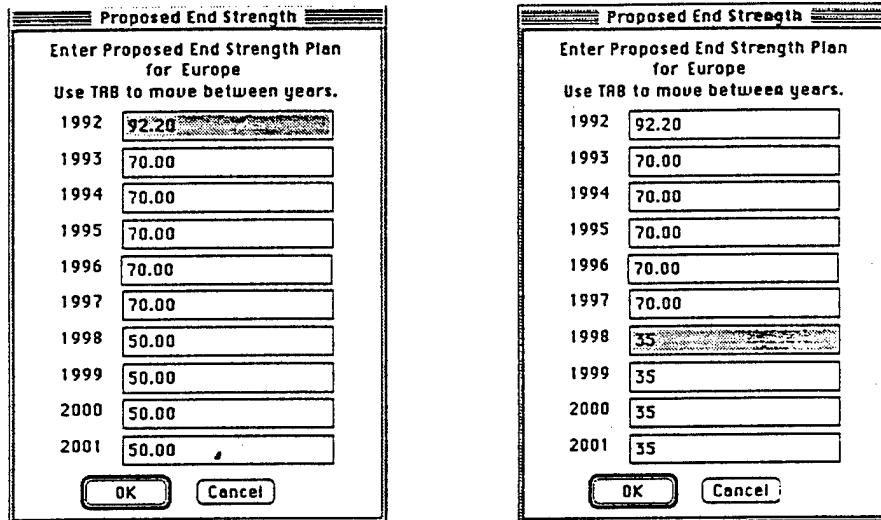


Figure 4.5. Dialog Box to Edit Proposed Force Structure for MACOM Geographic Region

Following the choice of MACOM geographic region, the dialog box shown in figure 4.5 is presented, which demonstrates both the before and after use views of this dialog box. This dialog box, which was in the original macro code, allows the user to provide proposed end strength changes from the base troop strength plan.

By providing the users with the capability to modify the base troop end strength and modify more than one geographic region at a time, the usefulness of Pro Forma was significantly enhanced. Prior to these changes the users were required to make separate runs for each geographic area, followed by hand calculations.

A copy of the macro code additions to the original code is located in Appendix A. The complete macro code, which includes both the original code and modifications made since FY92, is located in Appendix E.

4.2. Robles-Howard Action List Status

As directed by both MG Robles and MG Howard, the Pro Forma model was coordinated with the U.S. Army Costing and Economic Analysis Center (CEAC), the P2 Division (Training) of the ABO, and Army PA&E. Each agency was provided an updated version of the model, and provided with instruction on how to use it. The following table provides the respective points of contact for these agencies.

Agency	POC	DSN
U.S. Army Costing Economic Analysis Center (CEAC)	Mr. Bob Suchan	289-0336
P2 Division (Training)	Mr. George Miller	227-5433
U.S. Army Program Analysis & Evaluation (PA&E)	LTC O'Donnell	227-6388

Table 4.1. Pro Forma Additional Users

Once this coordination was completed, the immense task of translating the Pro Forma model from the old Primary Sub-Program structure to the new O-1 Management Restructure was begun. To accomplish this, the entire spreadsheet had to be reorganized

from PSPs to the new Activity Groups (AG). In addition, the cost factors, upon which the model makes the forecasts, had to be recalculated based the MACOM expenditures for the past three years sorted by AG instead of by PSP. This presented a problem in that the data for the past fiscal years stored on the Headquarters Department of the Army Decision Support System (DSS) was not organized by AG. However, there was a link between the old and the new systems.

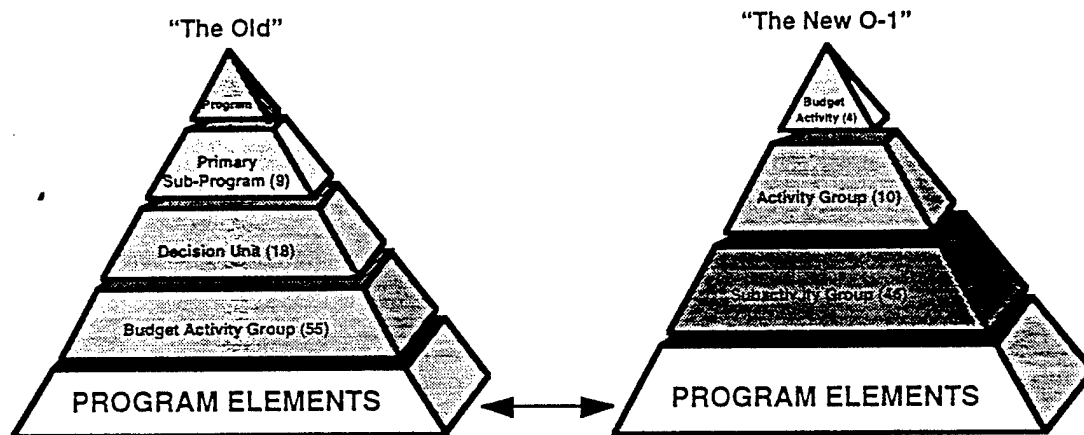


Figure 4.6. O-1 Management Restructure System

As shown in figure 4.6 above, the common link between the old and new systems for accounting for OMA dollars was the Program Element (PE). Thus, data was obtained by PE and by MACOM for both FY91-93, and then crosswalked to the new AGs. Using this data from the three fiscal years, the cost factors for Pro Forma were updated. A complete copy of the spreadsheet of the cost factor calculations is located at Appendix C.

4.3. Model Revalidation

Upon the completion of the recalculated cost factors, it was important to validate the effectiveness of the model. The Pro Forma model has been improved from predicting only 27% of the actual executed OMA dollars to predicting approximately 40%. This validation was accomplished by inputting the force structure changes for FY93, determining the cost changes, and comparing these changes with the actual dollar expenditures for FY93. As shown in figure 4.7, the model captures the majority of the OMA dollars spent by the troop commands, with AMC and the dollars spent by the Army staff remaining.

This improvement in the performance of the model can be explained by two key points. First, with the yearly updates of the data, the cost factors more accurately predict the impact of force structure changes. Previous cost factors had years where there were no force structure reductions.

Second, with the conversion to the new O-1 management restructuring, the primary AG is AG11, conventional forces training, accounts for well over 90% of the OMA dollars, and, therefore, the over 90% of the cost factor performance. Thus, increased performance of AG11 increases the performance of the overall model.

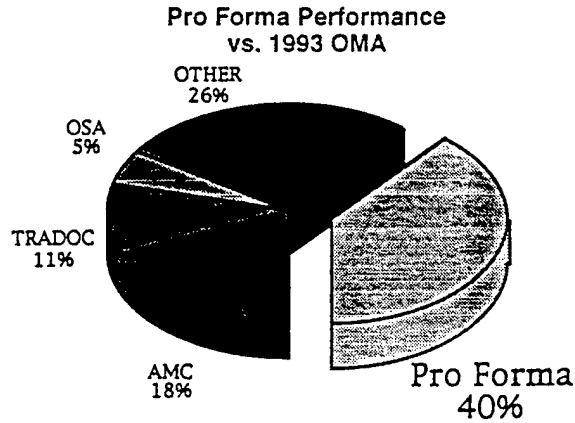


Figure 4.7. Pro Forma Validation - the OMA Pie

While 40% does not sound very good, it must be remembered that Pro Forma predicts OMA dollar expenditures for the major troop commands that are affected most directly by changes in the force structure. In addition, the needs of the primary customer, the Integration Branch of the ABO, are met. They need a quick tool to make decent estimates. Again, the ballpark answer is what they are after. Further detailed analysis, given much more time, would be required for more exact answers. To complete the analogy, where the Pro Forma model had gotten the ABO in the ballpark, the updated Pro Forma now approaches the edge of the infield. Further analysis and time would be required to get to closer to home plate.

5. CONCLUSION

Through the update of the cost factors for both the more current fiscal year data as well as the new O-1 Management restructure, the Pro Forma model provides even more reliable forecasts of future expenditures. In addition, with the improvements in the user-friendliness of the model dialog boxes the user has much more flexibility in testing scenarios of future force structure changes.

Referring again to the Robles-Howard Task List shown in figure 3.1, along with the improvements of the model dialog boxes, the first three actions have been completed. As directed by both MG Robles and MG Howard the Pro Forma model has been provided to CEAC, the P2 Division of the ABO, and Army PA&E. Future efforts will focus on the inclusion of an estimate of the number of civilian spaces associated with soldier force structure changes.

Even with the Army approaching the planned end of the drawdown, originally scheduled to be completed by the end of FY95, negotiations between the Congress and the Pentagon indicate that fiscal constraints may require further force structure changes. Consequently, there will be a continual need for short suspense answers to questions concerning the impact of future force structure changes. Pro Forma will provide those answers in a timely, accurate manner.

APPENDICES

- A. Macro Code Additions to Original Code
- B. Pro Forma Spreadsheet
- C. Cost Factor Spreadsheet
- D. Briefing Slides
- E. Complete Copy of Macro Code

Modifications to Original Macro Code

	C	D	E	F	G	H	I	J
132						Dialog Box 9		
133				492	143			
134	5	10				Would you like to input a different "Base Troop Strength"		
135	5	25				from which to compare your "Proposed Troop Strength Plan"?		
136	11					Yes	1	Choice_Change_Base
137	12					No, I want to use the current "Base Troop Strength" plan.		
138	12					OK		
139	1	11	103	64		Cancel		
140	2	87	104	64				
141								
142								
143						Dialog Box 10		
144				514	196	Choose Area to Modify Base End Strength Plan		
145	5	233	64			you can only select one area at a time.		
146	14	16	15	204	161	Select Area to Modify	7	
147	11					Total End Strength		
148	12					Europe		
149	12					CCNUS		
150	12					Korea		
151	12					Panama		
152	12					Pacific		
153	12					Done		
154	12					You may modify each area's		
155	5	276	18			Base End Strength Plan. However,		
156	5	230	43			Select "Done" when you are finished.		
157	5	250	99			OK		
158	1	283	145	64		Cancel		
159	2	364	145	64				
160								
161								

Modifications to Original Macro Code

	C	D	E	F	G	H	I	J
162						Dialog Box 11		
163						Modify Base End Strength Plan		
164	5	9	27			Use TAB to move between years.		
165	5	17	51			1992		
166	5	17	81			1993		
167	5	17	111			1994		
168	5	17	141			1995		
169	5	17	171			1996		
170	5	17	201			1997		
171	5	17	231			1998		
172	5	17	261			1999		
173	5	17	291			2000		
174	5	17	319			2001		
175	8	77	51	171			92.2	Ramps2
176	8	77	81	171			70	
177	8	77	111	171			70	
178	8	77	141	171			70	
179	8	76	171	171			70	
180	8	77	199	171			70	
181	8	77	229	171			50	
182	8	77	259	171			50	
183	8	77	289	171			50	
184	8	77	319	171			50	
185	1	70	353	65		OK		
186	2	150	355	64		Cancel		
187	5	119	9			Europe		
188	5	91	9			for		
189								
190								

Modifications to Original Macro Code

	C	D	E	F	G	H	I	J
191						Dialog Box 13		
192				580	188	Choose Geographic Area for Proposed Troop Strength Plan		
193	5	262	43		17	you can only modify one area at a time.		
194	14	14	13	235	137	Select the area to modify		
195	11						6	Choice_Change_Geographic_Area
196	12					Europe		
197	12					CONUS		
198	12					Korea		
199	12					Panama		
200	12					Pacific		
201	12					Done		
202	1	270	124	64		OK		
203	2	356	124	64		Cancel		
204	5	277	21			You may modify each area. However,		
205	5	280	84			Select "Done" when you are finished.		
206								

Modifications to Original Macro Code

	C	D	E	F	G	H	I	J
207						Dialog Box 14		
208		179	2	289	399	Proposed End Strength		
209	5	28	38			Use TAB to move between years.		
210	5	32	63			1992		
211	5	32	93			1993		
212	5	32	123			1994		
213	5	32	153			1995		
214	5	32	183			1996		
215	5	32	213			1997		
216	5	32	243			1998		
217	5	32	273			1999		
218	5	32	303			2000		
219	5	32	333			2001		
220	8	83	63	171			25.56	Ramps3
221	8	83	93	171			25.56	
222	8	83	123	171			25.56	
223	8	83	153	171			25.56	
224	8	82	183	171			25.56	
225	8	83	213	171			10	
226	8	83	243	171			10	
227	8	83	273	171			10	
228	8	83	303	171			10	
229	8	83	333	171			10	
230	1	53	370	65		OK		
231	2	142	370	64		Cancel		
232	5	129	20			Korea		
233	5	24	3			Enter Proposed End Strength Plan		
234	5	100	20			for		

Modifications to Original Macro Code

	K	L
1	Total End Strength (t)	Comments
2	=ECHO(FALSE)	Turns off screen.
3	=DIRECTORY(A2)	Sets directory to working directory.
4		
5		("DriveName:Folder1:Folder2")
6	=LEFT(RIGHT(NOW(),7),3)	
7	=ACTIVATE(A8)	
8	=SELECT(\$A\$9)	
9	=FORMULA("TMP"&\$K\$6&"_xls")	Keeps user from overwriting
10	=OPEN("AGUSER.XLS")	main spreadsheet.
11	=SAVE.AS(A9)	
12	=PROTECT.DOCUMENT?(FALSE,FALSE,FALSE)	
13		
14		
15	=DIALOG.BOX(Dialog_Box_9)	
16	=IF(OR(Choice_Change_Base=2,K15=FALSE))	
17	= GOTO(K21)	
18	=ELSE()	Calls Dialog Box 2 or quits
19	= Change_Current()	Requests ramp strength by FY.
20	=END.IF()	
21		Closes User if you do not want to proceed.
22	=SELECT(!CurrTot)	
23	=COPY()	
24	=ACTIVATE(A8)	
25	=SELECT(Ramps)	Takes data from Dialog Box 2
26	=PASTE.SPECIAL(3,1,FALSE,TRUE)	and puts it on TMP_spreadsheet.

Modifications to Original Macro Code

	M	N
28	=DIALOG.BOX(Dialog_Box_13)	Dialog Box asks which areas
29	=IF(M28=FALSE,GOTO(A26))	the user would like to alter.
30		
31	=ACTIVATE(\$A\$9)	
32	=IF(I195=1,SELECT(ICurrEur),IF(I195=2,SELECT(ICurrCON),IF(I195=3,SELECT(ICurrKor),IF(I195=4,SELECT(ICurrPan),IF(I195=5,SELECT(ICurrRamp))))))	Nested "IF" statements to
33	=COPY()	determine which area was
34	=IF(I195=1,SELECT(IEuropeRamp),IF(I195=2,SELECT(ICONUSRamp),IF(I195=3,SELECT(IKoreaRamp),IF(I195=4,SELECT(IPanamaRamp))))))	selected, to copy and paste
35	=ACTIVATE(\$A\$8)	the appropriate plans.
36	=SELECT(Ramps3)	
37	=PASTE.SPECIAL(3,1,FALSE,TRUE)	
38		
39	=IF(I195=1,FORMULA("Europe",H232),IF(I195=2,FORMULA("CONUS",H232),IF(I195=3,FORMULA("Korea",H232),IF(I195=4,FORMULA("Panama",H232))))))	Nested "IF" statement to
40		determine which area name
41		to paste into Dialog Box 14.
42		
43	=DIALOG.BOX(Dialog_Box_14)	Dialog Box allows user to alter
44	=IF(M43=FALSE,GOTO(M28))	current plan for a selected
45	=ACTIVATE(\$A\$8)	geographical area.
46	=SELECT(Ramps3)	
47	=COPY()	
48	=ACTIVATE(\$A\$9)	
49	=PASTE.SPECIAL(3,1,FALSE,TRUE)	
50	=GOTO(M28)	
51		
52	=SELECT(Print_Totals)	Selects "Print_Totals" area or
53	=COPY()	temporary file, copies it,
54	=PASTE.SPECIAL(3,1,FALSE,FALSE)	and pastes it back over itself.
55		This is done to preserve the
56		results while deleting the
57	Original Position of Clearing Block (n64:n67)	bulk of the spreadsheet.

Modifications to Original Macro Code

	O	P
28		
29		
30		
31		
32		
33		
34	Change Current End Strengths FUNCTION	
35		
36	=DIALOG.BOX(Dialog_Box_10)	Call Dialog Box 10
37	=IF(OR(O36=FALSE,I147=7),RETURN())	Actions if cancel button is clicked or "done" is selected.
38		
39	=IF(I147=1,FORMULA("Total",H187),IF(I147=2,FORMULA("Europe",H187),IF(I147=3,FORMULA("CONUS",H187),IF(I147=4,FORM	Nested if statements to determine choice of MACOM.
40		
41	=ACTIVATE(\$A\$9)	Activate Temp Worksheet
42	=IF(I147=1,SELECT(ICurrTot),IF(I147=2,SELECT(ICurrEur),IF(I147=3,SELECT(ICurrCON),IF(I147=4,SELECT(ICurrKor),IF(I147=5,SE	Nested if statements to select proper MACOM End Strength plan.
43	=COPY()	MACOM End Strength plan.
44	=ACTIVATE(\$A\$8)	Activate Macro92
45	=SELECT(Ramps2)	Selects Ramps2 area to paste
46	=PASTE.SPECIAL(3,1,FALSE,TRUE)	current MACOM plan.
47		
48	=DIALOG.BOX(Dialog_Box_11)	Call Dialog Box 11
49	=IF(O48=FALSE,GOTO(O36))	
50		
51	=SELECT(Ramps2)	
52	=COPY()	
53	=ACTIVATE(\$A\$9)	
54	=IF(I147=1,SELECT(ICurrTot),IF(I147=2,SELECT(ICurrEur),IF(I147=3,SELECT(ICurrCON),IF(I147=4,SELECT(ICurrKor),IF(I147=5,SE	Nested if statements to select proper MACOM End Strength plan for pasting to temporary plan.
55	=PASTE.SPECIAL(3,1,FALSE,TRUE)	Back to call for Dialog Box 10
56		
57	=GOTO(O36)	
58		
59	=RETURN()	Returns control back to point in Macro where function was called.
60		

Pro Forma Version 94.1, 11 April 1994

This Spreadsheet model was originally designed and constructed by MAJ Jim Cummings in FY92. It was updated and improved by MAJ Jim Watson in FY93 and FY94. The current version upgrades from the old PSPs to the current 0-1 Management Structure.

Cost Factor/Soldier	AG11	AG12	AG21	AG31	AG32	AG33	AG41	AG42	AG43	AG44	MPA	AFH	PCS
Europe	22426	0.001	0.013	0.000	0.000	0.344	0.127	0.466	1763	21037	35.492	3.061	1.551
CONUS	11593	0.181	0.099	0.000	0.000	0.154	0.019	0.086	0.358	0.001	35.496	1.454	1.551
Korea	24983	0.104	0.000	0.000	0.000	0.282	0.014	0.219	0.276	0.463	35.498	0.801	1.551
Panama	291731	2.741	0.000	0.000	0.000	0.234	0.099	0.119	0.445	0.893	35.492	3.327	1.551
Pacific	35547	0.016	0.000	0.000	0.008	0.430	0.004	0.198	0.718	0.050	35.492	7.034	1.551

Savings Dra: E Year E + 1 E + 2 E + 3 E + 4 E + 5 E + 6

Variable 0.125 0.5 0.375

Fixed 0.125 0.5 0.375

Proposed Troop Strength Plan (000's of Troops)

Total End Strength

Geographic Location	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
TOTAL	610.45	588.30	558.40	527.00	521.50	521.60	521.60	521.70	520.00	520.00
Europe	92.20	70.00	70.00	68.61	70.00	70.00	70.00	70.00	70.00	70.00
CONUS	453.89	448.39	406.89	378.01	385.69	385.69	385.69	385.69	385.69	385.69
Korea	25.56	25.56	25.56	25.05	25.56	25.56	25.56	25.56	25.56	25.56
Panama	7.50	7.50	7.50	7.35	7.50	7.50	7.50	7.50	7.50	7.50
Pacific	24.56	24.56	24.56	24.07	24.56	24.56	24.56	24.56	24.56	24.56

Current Troop Strength Plan (000's of Troops)

Geographic Location	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
TOTAL	610.45	588.30	558.40	537.70	521.50	521.60	521.60	521.70	520.00	520.00
Europe	92.20	70.00	70.00	70.00	70.00	70.00	70.00	70.00	70.00	70.00
CONUS	453.89	448.39	406.89	385.69	385.69	385.69	385.69	385.69	385.69	385.69
Korea	25.56	25.56	25.56	25.56	25.56	25.56	25.56	25.56	25.56	25.56
Panama	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50
Pacific	24.56	24.56	24.56	24.56	24.56	24.56	24.56	24.56	24.56	24.56

Delta (000's of Troops) (Current Troop Strength Plan - Proposed)

Geographic Location	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
TOTAL				10.21						
Europe				1.39						
CONUS				7.67						
Korea		0.00		0.51						
Panama		0.00		0.15		0.00				
Pacific	0.00			0.49						

Savings by Appropriation and Fiscal Year (Millions of Dollars)

Program	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
TOTAL	0.00	0.00	0.00	214.78	278.60	63.82	0.00	0.00	0.00	
OMA				21.27	85.09	63.82				
MPA	0.00	0.00	0.00	181.28	181.28	0.00	0.00	0.00	0.00	
AFH	0.00	0.00	0.00	4.30	4.30	0.00	0.00	0.00	0.00	
FCS	0.00	0.00	0.00	7.92	7.92	0.00	0.00	0.00	0.00	

OMA Savings Stream into Outyears

Total (Millions of Dollars)

Savings from cuts

In FY:

Savings realized in FY

Total for FY	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
1992										
1993										
1994										
1995	170.19			21.27	85.09	63.82				
1996										
1997										
1998										
1999										
2000										
2001										
Total	170.19			21.27	85.09	63.82				

Savings by Activity Group and Fiscal Year (Millions of Dollars)

Savings in AG	AG Total	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
11	154.67				19.33	77.33	58.00				
12	1.85				0.23	0.93	0.69				
21	0.79				0.10	0.39	0.30				
31											
32											
33	2.05				0.26	1.02	0.77				
41	0.30				0.04	0.15	0.11				
42	1.52				0.19	0.76	0.57				
43	5.76				0.72	2.88	2.16				
44	3.23				0.40	1.62	1.21				
TOTAL	170.18				21.27	85.09	63.82				

Total OMA for Europe

Savings from cuts

In FY:

Savings realized in FY

Total for FY	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
1992										
1993										
1994										
1995				4.73	18.93	14.20				
1996										
1997										
1998										
1999										
2000										
2001										
Total	37.85			4.73	18.93	14.20				

Total OMA for CONUS

Savings from cuts
In FY: Savings realized in FY

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Total for FY										
1992										
1993										
1994										
1995			11.98		47.91	35.93				
1996										
1997										
1998										
1999										
2000										
2001										
Total			11.98		47.91	35.93				

Total OMA for Korea

Savings from cuts
In FY: Savings realized in FY

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Total for FY										
1992										
1993										
1994										
1995				1.67	6.67	5.00				
1996										
1997										
1998										
1999										
2000										
2001										
Total				1.67	6.67	5.00				

Total OMA for Panama

Savings from cuts
in FY: Savings realized in FY

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Total for FY										
1992										
1993										
1994										
1995	5.11			0.64	2.56	1.92				
1996										
1997										
1998										
1999										
2000										
2001										
Total	5.11			0.64	2.56	1.92				

Total OMA for Pacific

Savings from cuts
in FY: Savings realized in FY

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Total for FY										
1992										
1993										
1994										
1995	18.07			2.26	9.03	6.77				
1996										
1997										
1998										
1999										
2000										
2001										
Total	18.07			2.26	9.03	6.77				

By MACOM by Budget Acitivity: Europe

AG11 Land Forces Europe	Savings realized in FY										
Savings from cuts	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	
In FY:	Total for FY										
1992											
1993											
1994											
1995	31.24			3.90	15.62	11.71					
1996											
1997											
1998											
1999											
2000											
2001											
Total	31.24			3.90	15.62	11.71					

AG12 Land Operations Support Europe	Savings realized in FY										
Savings from cuts	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	
In FY:	Total for FY										
1992											
1993											
1994											
1995	0.00			0.00	0.00	0.00					
1996											
1997											
1998											
1999											
2000											
2001											
Total	0.00			0.00	0.00	0.00					

AG21 Mobilization Operations Europe
Savings from cuts Savings realized in FY

In FY:	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Total for FY				0.02	0.01	0.01				
1992										
1993										
1994										
1995				0.00	0.01	0.01				
1996										
1997										
1998										
1999										
2000										
2001										
Total				0.02	0.01	0.01				

AG31 Accession Training Europe
Savings from cuts Savings realized in FY

In FY:	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Total for FY										
1992										
1993										
1994										
1995										
1996										
1997										
1998										
1999										
2000										
2001										
Total										

AG32 Basic Skill and Advanced Training Europe

Savings from cuts
in FY:
Savings realized in FY

Total for FY	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
1992										
1993										
1994										
1995										
1996										
1997										
1998										
1999										
2000										
2001										
Total										

AG33 Recruiting and Other Training & Education Europe

Savings from cuts
in FY:
Savings realized in FY

Total for FY	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
1992										
1993										
1994										
1995	0.48			0.06	0.24	0.18				
1996										
1997										
1998										
1999										
2000										
2001										
Total	0.48			0.06	0.24	0.18				

AG41 Security Programs

Europe

Savings realized in FY

Savings from cuts

in FY:

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Total for FY				0.02	0.09	0.07				
1992										
1993										
1994										
1995				0.02	0.09	0.07				
1996										
1997										
1998										
1999										
2000										
2001										
Total				0.02	0.09	0.07				

AG42 Logistics Operations

Europe

Savings realized in FY

Savings from cuts

in FY:

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Total for FY				0.08	0.32	0.24				
1992										
1993										
1994										
1995				0.08	0.32	0.24				
1996										
1997										
1998										
1999										
2000										
2001										
Total				0.08	0.32	0.24				

AG43 Service Wide Support Europe
Savings from cuts Savings realized in FY

	Total for FY	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
1992											
1993											
1994											
1995	2.46			0.31		1.23	0.92				
1996											
1997											
1998											
1999											
2000											
2001											
Total	2.46			0.31		1.23	0.92				

AG44 Logistics Operations Europe
Savings from cuts Savings realized in FY

	Total for FY	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
1992											
1993											
1994											
1995	2.84			0.35		1.42	1.06				
1996											
1997											
1998											
1999											
2000											
2001											
Total	2.84			0.35		1.42	1.06				

CONUS

AG11 Land Forces

CONUS

Savings from cuts

Savings realized in FY

In FY:

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Total for FY										
1992										
1993										
1994										
1995			11.12		44.49	33.37				
1996										
1997										
1998										
1999										
2000										
2001										
Total	88.98			11.12	44.49	33.37				

AG12 Land Operations Support

CONUS

Savings from cuts

Savings realized in FY

In FY:

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Total for FY										
1992										
1993										
1994										
1995				0.17	0.69	0.52				
1996										
1997										
1998										
1999										
2000										
2001										
Total	1.39			0.17	0.69	0.52				

Cost Factor Worksheet

	A	B	C	D	E	F
1	Process:					
2	Obtain executed dollar by Activity Group by MACOM;					
3	Divide executed dollars by 1000, then divide by the number of soldiers by command;					
4	Inflate to 1994 dollars, and average.					
5						
6		1993				
7	BA	FORSCOM	USAREUR	KOREA	USARPAC	USARSO
8	11	2,840,888,000	2,142,067,000	499,211,000	491,859,000	175,566,821
9	12	44,661,067	0	3,410,274	0	14,411,000
10	21	9,859,000	3,326,732	0	10,549	0
11	31	28,306	0	0	0	0
12	32	74,000	0	0	0	0
13	33	36,483,000	28,837,000	6,063,420	6,738,523	1,546,115
14	41	2,791,000	9,587,525	0	133,459	625,411
15	42	21,490,000	52,139,000	3,827,000	2,676,191	798,000
16	43	66,547,000	171,790,000	6,201,000	16,603,000	3,373,000
17	44	132,214	199,612,000	10,102,753	648,465	6,576,603
18						
19	Above table divided by 1000					
20		1993				
21	BA	FORSCOM	USAREUR	KOREA	USARPAC	USARSO
22	11	2,840,888	2,142,067	499,211	491,859	175,567
23	12	44,661	0	3,410	0	14,411
24	21	9,859	3,327	0	11	0
25	31	28	0	0	0	0
26	32	74	0	0	0	0
27	33	36,483	28,837	6,063	6,739	1,546
28	41	2,791	9,588	0	133	625
29	42	21,490	52,139	3,827	2,676	798
30	43	66,547	171,790	6,201	16,603	3,373
31	44	132	199,612	10,103	648	6,577
32						
33						

Cost Factor Worksheet


	A	B	C	D	E	F
34		End Strengths for 1993				
35	BA	FORSCOM	USAREUR	KOREA	USARPAC	USARSO
36		223975	86279	21135	14861	5145
37						
38		Above Table divided by End Strengths by command for 1993				
39		1993				
40	BA	FORSCOM	USAREUR	KOREA	USARPAC	USARSO
41	11	12.68395	24.82721	23.62011	33.09730	34.12377
42	12	0.19940	0.00000	0.16136	0.00000	2.80097
43	21	0.04402	0.03856	0.00000	0.00071	0.00000
44	31	0.00013	0.00000	0.00000	0.00000	0.00000
45	32	0.00033	0.00000	0.00000	0.00000	0.00000
46	33	0.16289	0.33423	0.28689	0.45344	0.30051
47	41	0.01246	0.11112	0.00000	0.00898	0.12156
48	42	0.09595	0.60431	0.18107	0.18008	0.15510
49	43	0.29712	1.99110	0.29340	1.11722	0.65559
50	44	0.00059	2.31356	0.47801	0.04364	1.27825
51						
52		Inflation Factors to bring the respective dollars to 1994 dollars provided by LTC Suarez				
53		1993	1992	1991		
54		0.9766	0.9537	0.9277		
55		1.0240	1.0485	1.0779		
56		$=(0.9766)^{-1}$	$=(0.9537)^{-1}$	$=(0.9277)^{-1}$		
57						
58						
59		Above table for 1991-1993, inflated to 1994 Dollars and averaged				
60		FORSCOM	USAREUR	KOREA	USARPAC	USARSO
61	11	11.593	22.426	24.863	35.547	29.731
62	12	0.181	0.001	0.104	0.000	2.741
63	21	0.099	0.013	0.000	0.016	0.000
64	31	0.000	0.000	0.000	0.000	0.000
65	32	0.000	0.000	0.000	0.006	0.000
66	33	0.154	0.344	0.282	0.430	0.234
67	41	0.013	0.127	0.014	0.004	0.099
68	42	0.085	0.465	0.219	0.198	0.119
69	43	0.358	1.763	0.276	0.718	0.445
70	44	0.001	2.037	0.463	0.050	0.893

Cost Factor Worksheet

	H	I	J	K	L	M
1						
2						
3						
4						
5						
6		1992				
7		FORSCOM	USAREUR	KOREA	USARPAC	USARSO
8	11	2,621,697,000	2,377,658,000	528,120,000	537,523,000	175,222,000
9	12	43,891,252	298,471	2,713,903	0	17,620,000
10	21	38,951,280	0	0	486,000	0
11	31	36,920	0	0	0	0
12	32	84,000	0	0	0	0
13	33	33,185,000	43,346,000	5,997,898	6,215,045	1,371,944
14	41	3,951,000	21,076,894	0	10,960	573,000
15	42	16,519,000	36,651,000	5,685,998	2,931,700	549,792
16	43	91,340,000	211,184,000	5,226,000	11,225,000	2,959,000
17	44	136,000	232,025,000	9,906,993	638,291	4,977,088
18						
19		Above table divided by 1000				
20		1992				
21		FORSCOM	USAREUR	KOREA	USARPAC	USARSO
22	11	2,621,697	2,377,658	528,120	537,523	175,222
23	12	43,891	298	2,714	0	17,620
24	21	38,951	0	0	486	0
25	31	37	0	0	0	0
26	32	84	0	0	0	0
27	33	33,185	43,346	5,998	6,215	1,372
28	41	3,951	21,077	0	11	573
29	42	16,519	36,651	5,686	2,932	550
30	43	91,340	211,184	5,226	11,225	2,959
31	44	136	232,025	9,907	638	4,977
32						
33						
34		End Strengths for 1992				
35		FORSCOM	USAREUR	KOREA	USARPAC	USARSO
36		225224	100972	21859	15211	5248
37						
38		Above Table divided by End Strengths by command for 1992				
39		1992				
40		FORSCOM	USAREUR	KOREA	USARPAC	USARSO
41	11	11.64040	23.54770	24.16030	35.33778	33.38834
42	12	0.19488	0.00296	0.12415	0.00000	3.35747
43	21	0.17294	0.00000	0.00000	0.03195	0.00000
44	31	0.00016	0.00000	0.00000	0.00000	0.00000
45	32	0.00037	0.00000	0.00000	0.00000	0.00000
46	33	0.14734	0.42929	0.27439	0.40859	0.26142
47	41	0.01754	0.20874	0.00000	0.00072	0.10918
48	42	0.07334	0.36298	0.26012	0.19274	0.10476
49	43	0.40555	2.09151	0.23908	0.73795	0.56383
50	44	0.00060	2.29791	0.45322	0.04196	0.94838

Cost Factor Worksheet

	O	P	Q	R	S	T
1						
2						
3						
4						
5						
6		1991				
7		FORSCOM	USAREUR	KOREA	USARPAC	USARSO
8	11	2,114,399,000	2,994,519,000	594,046,000	523,312,000	173,576,000
9	12	29,540,856	242,379	375,786	0	16,538,404
10	21	15,767,202	0	0	212,000	0
11	31	22,776	0	0	0	0
12	32	126,000	0	0	270,994	0
13	33	30,967,164	41,635,000	6,296,000	5,845,357	1,093,704
14	41	1,785,330	8,194,000	1,008,979	11,000	514,979
15	42	17,410,000	69,078,000	4,731,000	3,021,000	792,791
16	43	76,165,000	184,281,000	6,590,000	3,448,758	644,804
17	44	102,476	232,238,000	10,027,886	920,757	3,394,323
18						
19		Above table divided by 1000				
20		1991				
21		FORSCOM	USAREUR	KOREA	USARPAC	USARSO
22	11	2,114,399	2,994,519	594,046	523,312	173,576
23	12	29,541	242	376	0	16,538
24	21	15,767	0	0	212	0
25	31	23	0	0	0	0
26	32	126	0	0	271	0
27	33	30,967	41,635	6,296	5,845	1,094
28	41	1,785	8,194	1,009	11	515
29	42	17,410	69,078	4,731	3,021	793
30	43	76,165	184,281	6,590	3,449	645
31	44	102	232,238	10,028	921	3,394
32						
33						
34		End Strengths for 1991				
35		FORSCOM	USAREUR	KOREA	USARPAC	USARSO
36		237772	188048	25543	15802	9723
37						
38		Above Table divided by End Strengths by command for 1991				
39		1991				
40		FORSCOM	USAREUR	KOREA	USARPAC	USARSO
41	11	8.89255	15.92423	23.25670	33.11682	17.85210
42	12	0.12424	0.00129	0.01471	0.00000	1.70096
43	21	0.06631	0.00000	0.00000	0.01342	0.00000
44	31	0.00010	0.00000	0.00000	0.00000	0.00000
45	32	0.00053	0.00000	0.00000	0.01715	0.00000
46	33	0.13024	0.22141	0.24649	0.36991	0.11249
47	41	0.00751	0.04357	0.03950	0.00070	0.05297
48	42	0.07322	0.36734	0.18522	0.19118	0.08154
49	43	0.32033	0.97997	0.25800	0.21825	0.06632
50	44	0.00043	1.23499	0.39259	0.05827	0.34910



Operations Research Center
United States Military Academy
West Point, New York

**Information Briefing for
MG Robert T. Howard**
Director of the Army Budget
16 August 1993

COL JAMES L KAYS
Professor and Head,
Department of Systems Engineering
and
Director,
Operations Research Center

Purpose

Update on ORCEN Projects

Update on Force Structure Costing Model-
Pro Forma

Update on AMC's Resource Allocation Model-
RAM

Purpose

Provide update on the Force Structure
Costing Model - Pro Forma

Demonstration of the Model

Review of Taskers

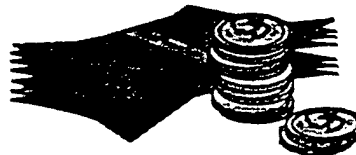
Slide 3

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ORCEN Tasks

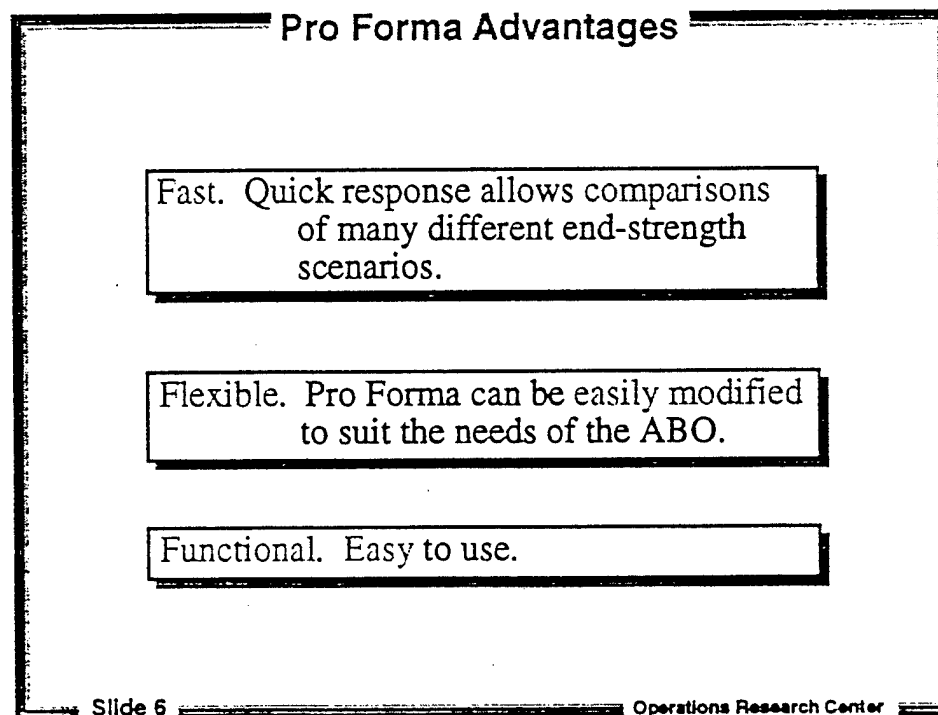
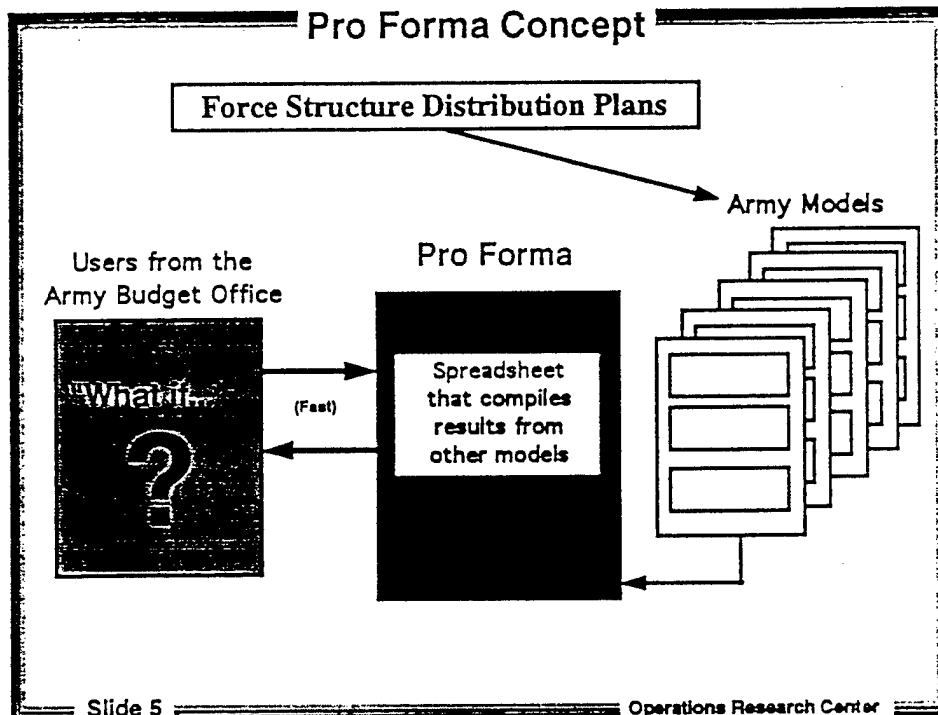
Develop a way to estimate Army
expenses as it down-sizes.

Take into account different
appropriations and troop
locations.



Slide 4

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Pro Forma DEMONSTRATION

Slide 7

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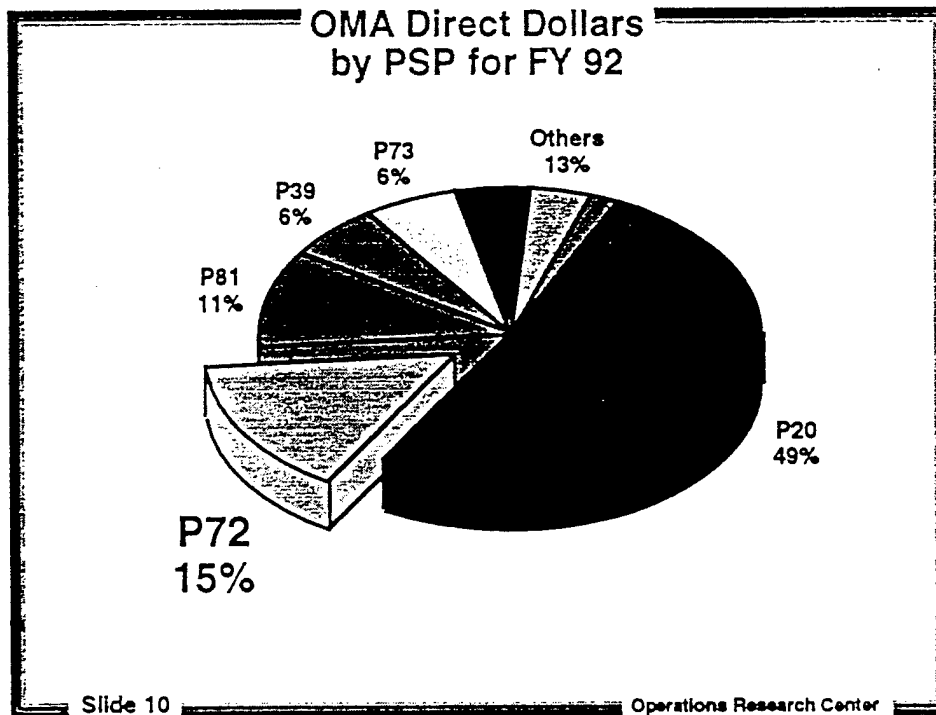
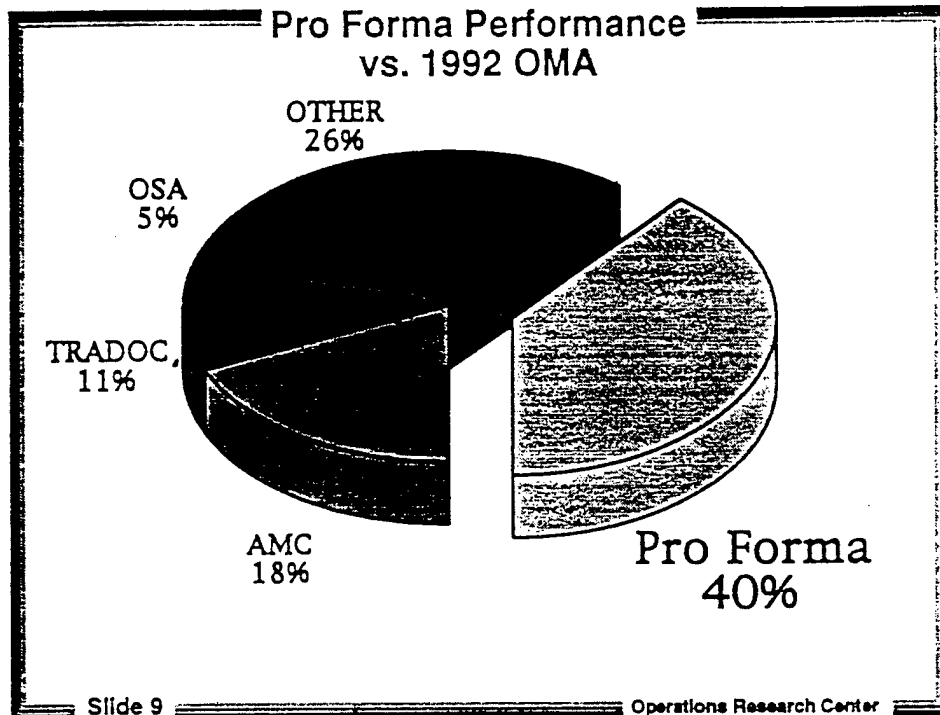
FY93 Objectives

- ✓ Update cost factors to account for FY 92 actual executed dollars
- ✓ Improved Model Usability :
 - ✓ Modify Multiple Geographic Areas
 - ✓ Modify Base-year End-strengths

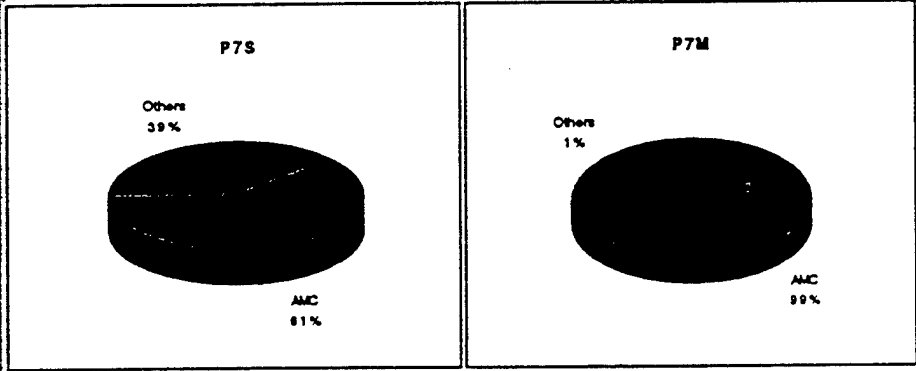
Increase Pro Forma's percentage of the OMA pie

Slide 8

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OMA 7S and 7M by MACOM



Major Commands by PSP Not Currently Included in Pro Forma

- P2 INSCOM, AMC
- P12 TRADOC, AMC, OCE
- P72 AMC
- P73 AMC

Summary of Pro Forma Taskers

- 1) Coordinate the Pro Forma model with CEAC.
- 2) The P2 Division should use the Pro Forma model.
- 3) Reconfigure the Pro Forma model cost/savings break-out from the old PSP's to the new 'O-1 Management Structure'.
- 4) Incorporate the Reserve Component.
- 5) Ensure we compensate for VSI/SSB/SERB/Early Retirement and Unemployment compensation through FY95. These will all impact MPA.
- 6) There should be a rough estimate on how many civilian spaces are tied to OMA savings. This must be done by geographic area and adjusted for host nation assessments.
- 7) Ensure model captures the support costs associated with end strength reductions. There are RETROEUR costs, SDT, etc., associated with moving equipment.
- 8) After the model is updated to address the above, then focus on capturing AMC, OSA, ... etc. dollars.

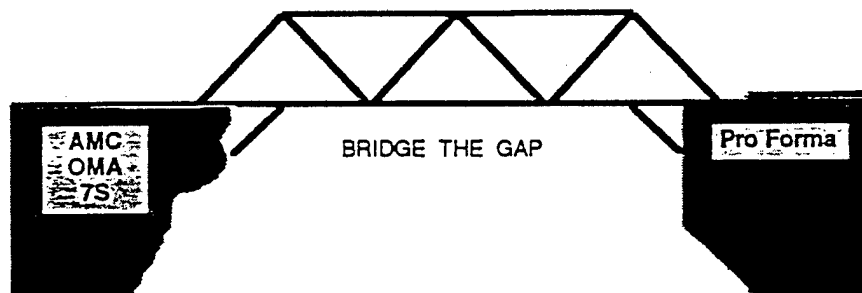
Slide 13

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Pro Forma Cost Factors for AMC 7S Dollars

2 Ways

Input	Cost Factor(s)	Output
Δ ARMY Soldiers	$\left(\frac{\text{AMC Civilians}}{\text{ARMY Soldier}} \right) \times \left(\frac{\text{AMC 7S Dollars}}{\text{AMC Civilian}} \right)$	Δ 7S Dollars
Δ Civilians	$\left(\frac{\text{AMC 7S Dollars}}{\text{AMC Civilian}} \right)$	Δ 7S Dollars



Slide 14

Operations Research Center

MACRO941.XLM

	A	B
1	Auto_Open (o)	Dialog Boxes are defined in columns c through j:
2	IKE:ABO	This is the default directory.
3		"HardDrive:Folder1:Folder2:etc"
4		If this is not a valid directory,
5	=DIALOG.BOX(Welcome)	the macro prompts you for
6		your current directory and updates itself.
7		
8	MACRO941.XLM	This is the Macro name.
9	TMP451_xls	This is the temporary worksheet name.
10	TMP129_T.xls	This is the temporary worksheet name.
11		
12	=ECHO(FALSE)	
13	=DIRECTORY(A2)	
14	=ERROR(TRUE,O14)	
15	=ACTIVATE(A8)	
16	i=COLUMNS(FILES())	
17	dir=FALSE	
18	=FOR("counter",1,i,1)	
19	=IF(INDEX(FILES(),counter)="AGUSER.XLS")	
20	dir=TRUE	
21	=GOTO(A23)	
22	=ELSE()	
23	=END.IF()	
24	=NEXT()	
25	=IF(dir=FALSE,GOTO(O2),GOTO(A26))	
26	=ERROR(TRUE)	
27		
28	=DIALOG.BOX(Dialog_Box_1)	Opens Dialog Box 1 and
29	=IF(A28=FALSE)	asks for input on how to
30	= RETURN()	structure the force.
31	=ELSE.IF(I24=1)	
32	= GOTO(K2)	Branches to different cells
33	=ELSE.IF(I24=2)	based on response in
34	= GOTO(M2)	Dialog Box 1.

	A	B
35	=END.IF()	
36		
37	One Area, Constant End Strength	
38	=LEFT(RIGHT(NOW(),7),3)	
39	=ACTIVATE(A8)	Keeps user from overwriting
40	=SELECT(\$A\$9)	main spreadsheet.
41	=FORMULA("TMP" &A38&".xls")	
42	=OPEN("AGUSER.XLS")	Saves as a Temporary file.
43	=SAVE.AS(A9)	
44	=PROTECT.DOCUMENT?(FALSE,FALSE,,FALSE)	
45		
46	=DIALOG.BOX(Dialog_Box_9)	Call Dialog Box 9
47	=IF(OR(I136=2,A46=FALSE))	If not changing current plan
48	= GOTO(A53)	then skip to next Dialog Box.
49	=ELSE()	
50	= Change_Current()	Call function "Change_Current()"
51	=END.IF()	
52		
53	=DIALOG.BOX(Dialog_Box_4)	
54	=IF(A53=FALSE,GOTO(A26),GOTO(A55))	
55		
56	=SELECT(!\$B\$30:\$K\$35)	
57	=CLEAR()	Clears formulae from proposal.
58		
59	=SELECT(!CurrTot)	
60	=COPY()	Copies End Strength to proposal.
61	=SELECT(!TOTALRamp)	
62	=PASTE.SPECIAL(3,1,FALSE,FALSE)	
63		
64	=IF(\$I\$78=1)	
65	=SELECT(!CurrEur)	Selects Current Plan and places
66	=COPY()	in dialog box for new ramps.
67	=SELECT(!EuropeRamp)	
68	=ELSE.IF(\$I\$78=2)	Selects input area on current

	A	B
69	=SELECT(I(CurrCON))	spreadsheet.
70	=COPY()	
71	=SELECT(ICONUSRamp)	
72	=ELSE.IF(\$I\$78=3)	
73	=SELECT(I(CurrKor))	
74	=COPY()	
75	=SELECT(I(KoreaRamp))	
76	=ELSE.IF(\$I\$78=4)	
77	=SELECT(I(CurrPan))	
78	=COPY()	
79	=SELECT(IPanamaRamp)	
80	=ELSE.IF(\$I\$78=5)	
81	=SELECT(I(CurrPac))	
82	=COPY()	
83	=SELECT(IPacificRamp)	
84	=END.IF()	
85		
86	=ACTIVATE(A8)	
87	=SELECT(Ramps)	Pastes current Plan to Macro.
88	=PASTE.SPECIAL(3,1,FALSE,TRUE)	
89		
90	=DIALOG.BOX(Dialog_Box_2)	Requests troop strength.
91	=IF(A90=FALSE)	
92	=GOTO(A53)	
93		
94	=ELSE()	
95	=ACTIVATE(\$A\$8)	
96	=SELECT(Ramps)	
97	=COPY()	
98	=ACTIVATE(\$A\$9)	
99	=PASTE.SPECIAL(3,1,FALSE,TRUE)	Pastes data on proper line.
100		
101	=SELECT("R[24]C:R[24]C[9]")	
102	=COPY()	

MACRO9411.XLM

	A	B
103	=SELECT("R36C2:R36C11")	Pastes delta for future operations.
104	=PASTE.SPECIAL(3,1,FALSE,FALSE)	
105	=SELECT("R37C2:R37C11")	Pastes New Ramp.
106	=FORMULA("=R[-7]C-sum(R[-6]C:R[-1]C)")	
107	=FILL.RIGHT()	
108	=COPY()	
109	=PASTE.SPECIAL(3,1,FALSE,FALSE)	
110	=END.IF()	From 175
111		
112	=SELECT("\$B\$30)	
113	=IF(185=1)	
114	=FOR("counter",1,5,1)	
115	=SELECT("R[1]C:R[1]C[9]")	
116		
117	=IF(counter=178)	Skips this iteration.
118	=GOTO(A127)	
119	=ELSE.IF(counter=2)	
120	=FORMULA("=R[12]C+R[4]C")	Pastes CONUS data.
121	=FILL.RIGHT()	
122		
123	=ELSE()	Pastes Other Data
124	=FORMULA("=R[12]C")	
125	=FILL.RIGHT()	
126		
127	=END.IF()	From A102
128		
129	=NEXT()	
130	=SELECT("\$B\$30:\$K\$35)	
131	=COPY()	
132	=PASTE.SPECIAL(3,1,FALSE,FALSE)	
133	=SELECT("\$B\$36:\$K\$37)	Clears unneeded information.
134	=CLEAR()	
135		
136	=ELSE()	With A105, other option for

	A	B
137	=FOR("counter",1,5,1)	
138	=SELECT("R[1]C:R[1]C[9]")	placing troops.
139	=IF(counter=178)	
140	=GOTO(A156)	
141	=ELSE.IF(counter=1)	
142	=FORMULA("=R[12]C+R[5]C*(R[12]C/R[6]C)")	
143	=FILL.RIGHT()	
144	=ELSE.IF(counter=2)	
145	=FORMULA("=R[12]C+R[4]C*(R[12]C/R[5]C)")	
146	=FILL.RIGHT()	
147	=ELSE.IF(counter=3)	
148	=FORMULA("=R[12]C+R[3]C*(R[12]C/R[4]C)")	
149	=FILL.RIGHT()	
150	=ELSE.IF(counter=4)	
151	=FORMULA("=R[12]C+R[2]C*(R[12]C/R[3]C)")	
152	=FILL.RIGHT()	
153	=ELSE.IF(counter=5)	
154	=FORMULA("=R[12]C+R[1]C*(R[12]C/R[2]C)")	
155	=FILL.RIGHT()	
156	=END.IF()	From A128
157	=NEXT()	From A126
158	=SELECT("=\$B\$30:\$K\$35")	
159	=COPY()	
160	=PASTE.SPECIAL(3,1,FALSE,FALSE)	
161	=SELECT("=\$B\$36:\$K\$37")	
162	=CLEAR()	Clears unneeded information.
163	=END.IF()	
164		From A198
165	=SELECT("=\$B\$30")	
166	=VLINE(-1)	
167	=DIALOG.BOX(Dialog_Box_5)	Gives instructions to continue.
168	=RETURN()	
169		
170		

MACRO941.XLM

	A	B
171	Auto_Close_Del (d)	
172	=DIRECTORY(A2)	
173	=ECHO(FALSE)	
174	i=1	counter
175	=WHILE(COLUMNS(DOCUMENTS())>1)	Do the following when there is
176	=ACTIVATE(INDEX(DOCUMENTS(),i))	more than one open file.
177	=IF(INDEX(DOCUMENTS(),i)=A8)	
178	i=i+1	
179	=SAVE()	
180	=ELSE.IF(LEFT(INDEX(DOCUMENTS(),i),3)="TMP")	Do not save TMP files.
181	=CLOSE(FALSE)	
182		
183	=ELSE()	Save other files.
184	=CLOSE(TRUE)	
185	=END.IF()	
186		
187	=NEXT()	Ends WHILE loop.
188	i=1	
189	=WHILE(ISERROR(INDEX(FILES(),i))=FALSE)	Gets rid of TMP files.
190	=IF(INDEX(FILES(),i)=A8)	
191	i=i+1	
192	=GOTO(A197)	
193	=ELSE.IF(LEFT(INDEX(FILES(),i),3)="TMP")	
194	=FILE.DELETE(INDEX(FILES(),i))	
195	=ELSE()	
196	i=i+1	
197	=END.IF()	
198	=NEXT()	
199	=SAVE()	
200	=QUIT()	
201	=RETURN()	

	C	D	E	F	G	H	I	J
1						DIALOG BOX DEFINITIONS		
2	Item	X	Y	W	H	Welcome		
3								
4		125	30	423	330	Force Structure Costing Model - Pro Forma		
5		55	68			Army Budget Office		
6		130	0			Assistant Secretary of the Army for Financial Management		
7		7	20			Version 04.1		
8		153	88			Prepared by:		
9		156	126			Operations Research Center		
10		114	148			United States Military Academy		
11		100	165			West Point, New York 10996		
12		111	182			(914)-938-5528		
13		149	229			OK		
14		176	298	64		DSN: 688-5528		
15		154	245			Press "Enter" or Click "OK" to proceed.		
16		70	271			If you have questions about this model call:		
17		47	208					
18								
19								
20						Dialog Box 1		
21						Choose Option		
22	5	9	3	510	168			
23	14	7	20	480	85	How do you want to structure the force?		
24	11						1	
25	12	11	40	395		Change Total End Strength (E/S).		
26	12	11	60	417		Change Total E/S by Changing Geographic Area E/S.		
27	12	11	80	450		Change Geographic Area E/S, but Maintain Constant Total E/S		
28	1	20	140	64		OK		
29	2	95	140	64		Cancel		
30								
31						Dialog Box 2		
32		179	5	400		Enter Total End Strength Ramp in 000's		
33	5	81	9			Use TAB to move between years.		
34	5	84	38	36	18	1992		
35	5	84	68			1993		
36	5	84	98			1994		
37	5	84	128			1995		
38	5	84	158			1996		

	C	D	E	F	G	H	I	J
39	5	84	188			1997		
40	5	84	218			1998		
41	5	84	248			1999		
42	5	84	278			2000		
43	5	84	309			2001		
44	8	139	38	171			610.45	Ramps
45	8	139	68	171			588.3	
46	8	139	98	171			558.4	
47	8	139	128	171			537.7	
48	8	139	158	171			521.5	
49	8	139	188	171			521.6	
50	8	139	218	171			521.6	
51	8	139	248	171			521.7	
52	8	139	278	171			520	
53	8	139	309	171			520	
54	1	123	349	65		OK		
55	2	203	351	64		Cancel		
56								
57								
58								
59						Dialog Box 3		
60	5	9	9	240	200	Select the area to alter		
61	14	15	10	200	137	Select One		
62	11						1	
63	12					Europe		
64	12					CONUS		
65	12					Korea		
66	12					Panama		
67	12					Pacific		
68	1	35	165	64		OK		
69	2	125	165	64		Cancel		
70								
71								
72						Dialog Box 4		
73	5	9	9			Decrement One Area		
74	5	9	10			You have elected to change one geographic		
75	5	9	25			area while maintaining the end strength		
76	5	9	40			at the current planned levels.		

	C	D	E	F	G	H	I	J
77	14	9	70	320	110	Which area do you want to decrement?		
78	11						1	
79	12			280		Europe		
80	12			280		CONUS		
81	12			280		Korea		
82	12			280		Panama		
83	12			280		Pacific		
84	14	8	223	320	108	How do you want the reduction allocated?		
85	11						1	
86	12			280		All to CONUS		
87	12			280		Proportionally among the remaining		
88	5	63	279			Areas		
89	1	57	364	64		OK		
90	2	162	363	64		Cancel		
91								
92						Dialog Box 5		
93	5	9	9		140	When You're Finished		
94	5	9	15			Type Ctrl-P to:		
95	5	68	35			Print		
96	5	67	55			Save		
97	5	67	75			Make another estimate		
98	1	80	105			OK		
99								
100						Dialog Box 6		
101	5	9	9			Options		
102	14	10	10	200	137	Select One		
103	11						4	
104	12	20	90	200		Do Another Iteration?		
105	12	20	60	200		Print This Document?		
106	12	20	30	200		Save This Document?		
107	12	20	120	200		Quit the Model?		
108	1	40	170	64		OK		
109	2	130	170	64		Cancel		
110								
111						Dialog Box 7		
112						No Longer Needed		
113								
114								

	C	D	E	F	G	H	I	J
115								
116								
117	5	9	9			Dialog Box 8		
118	5	12	15			Print Options		
119	5	28	30			The Proposed Plan, Current Plan,		
120	5	28	45			and Delta will be included in		
121	14	20	70	270	110	any printout.		
122	11					Options	3	
123	12		90	250		None		
124	12		110	250		Totals Only		
125	12		130	250		Totals and Geographic Areas		
126	12		150	250		Totals and Sub-Programs		
127	1	40	190	64		OK		
128	2	130	190	64		Cancel		
129								
130								
131								
132						Dialog Box 9		
133					492 143			
134	5	5	10			Would you like to input a different "Base Troop Strength"		
135	5	5	25			from which to compare your "Proposed Troop Strength Plan"?		
136	11						1	Choice_Change_Base
137	12					Yes		
138	12					No, I want to use the current "Base Troop Strength" plan.		
139	1	11	103	64		OK		
140	2	87	104	64		Cancel		
141								
142								
143						Dialog Box 10		
144					514 196	Choose Area to Modify Base End Strength Plan		
145	5	233	64			you can only select one area at a time.		
146	14	16	15	204	161	Select Area to Modify	7	
147	11							
148	12					Total End Strength		
149	12					Europe		
150	12					CONUS		
151	12					Korea		
152	12					Panama		

	C	D	E	F	G	H	I	J
153	12					Pacific		
154	12					Done		
155	5	276	18			You may modify each area's		
156	5	230	43			Base End Strength Plan. However,		
157	5	250	99			Select "Done" when you are finished.		
158	1	283	145	64		OK		
159	2	364	145	64		Cancel		
160								
161								
162						Dialog Box 11		
163						Modify Base End Strength Plan		
164	5	9	27			Use TAB to move between years.		
165	5	17	51			1992		
166	5	17	81			1993		
167	5	17	111			1994		
168	5	17	141			1995		
169	5	17	171			1996		
170	5	17	201			1997		
171	5	17	231			1998		
172	5	17	261			1999		
173	5	17	291			2000		
174	5	17	319			2001		
175	8	77	51	171			92.2	Ramps2
176	8	77	81	171			70	
177	8	77	111	171			70	
178	8	77	141	171			70	
179	8	76	171	171			70	
180	8	77	199	171			70	
181	8	77	229	171			50	
182	8	77	259	171			50	
183	8	77	289	171			50	
184	8	77	319	171			50	
185	1	70	353	65		OK		
186	2	150	355	64		Cancel		
187	5	119	9			Europe		
188	5	91	9			for		
189								
190								

MACRO941.XLM

	C	D	E	F	G	H	I	J
191						Dialog Box 12		
192				358	281			
193	5	20	9	270	200	Select the one or more areas to alter:		
194	14	19	34	200	137	Select One at a time		
195	11						1	
196	12					Europe		
197	12					CONUS		
198	12					Korea		
199	12					Panama		
200	12					Pacific		
201	12					Done		
202	1	28	192	64		OK		
203	2	114	192	64		Cancel		
204								
205								
206						Dialog Box 13		
207				580	188	Choose Geographic Area for Proposed Troop Strength Plan		
208	5	262	43	17	17	you can only modify one area at a time.		
209	14	14	13	235	137	Select the area to modify		
210	11						6	Choice_Change_Geographic_Area
211	12					Europe		
212	12					CONUS		
213	12					Korea		
214	12					Panama		
215	12					Pacific		
216	12					Done		
217	1	270	124	64		OK		
218	2	356	124	64		Cancel		
219	5	277	21			You may modify each area. However,		
220	5	280	84			Select "Done" when you are finished.		
221								
222						Dialog Box 14		
223		179	2	289	399	Proposed End Strength		
224	5	28	38			Use TAB to move between years.		
225	5	32	63			1992		
226	5	32	93			1993		
227	5	32	123			1994		
228	5	32	153			1995		

	C	D	E	F	G	H	I	J
229	5	32	183			1996		
230	5	32	213			1997		
231	5	32	243			1998		
232	5	32	273			1999		
233	5	32	303			2000		
234	5	32	333			2001		
235	8	83	63	171			25.56	Ramps3
236	8	83	93	171			25.56	
237	8	83	123	171			25.56	
238	8	83	153	171			25.56	
239	8	82	183	171			25.56	
240	8	83	213	171			10	
241	8	83	243	171			10	
242	8	83	273	171			10	
243	8	83	303	171			10	
244	8	83	333	171			10	
245	1	53	370	65		OK		
246	2	142	370	64		Cancel		
247	5	129	20			Korea		
248	5	24	3			Enter Proposed End Strength Plan		
249	5	100	20			for		

	K	L
1	Total End Strength (I)	Comments
2	=ECHO(FALSE)	Turns off screen.
3	=DIRECTORY(A2)	Sets directory to working directory.
4		
5		(*DriveName:Folder1:Folder2*)
6	=LEFT(RIGHT(NOW(),7),3)	
7	=ACTIVATE(A8)	
8	=SELECT(\$A\$9)	
9	=FORMULA("TMP*\$\$K\$68*.xls")	Keeps user from overwriting
10	=OPEN("AGUSER.XLS")	
11	=SAVE.AS(A9)	main spreadsheet.
12	=PROTECT.DOCUMENT?(FALSE,FALSE,FALSE)	
13		
14		
15	=DIALOG.BOX(Dialog_Box_9)	
16	=IF(OR(Choice_Change_Base=2,K15=FALSE))	
17	= GOTO(K21)	
18	=ELSE()	Calls Dialog Box 2 or quits
19	= Change_Current()	Requests ramp strength by FY.
20	=END.IF()	
21		Closes User if you do not want to proceed.
22	=SELECT(I(CurrTot))	
23	=COPY()	
24	=ACTIVATE(A8)	
25	=SELECT(Ramps)	
26	=PASTE.SPECIAL(3,1,FALSE,TRUE)	Takes data from Dialog Box 2 and puts it on TMP_spreadsheet.
27	=DIALOG.BOX(Dialog_Box_2)	
28	=IF(K27=FALSE,GOTO(A28))	
29		
30		
31		
32	=ACTIVATE(A8)	
33	=SELECT(Ramps)	
34	=COPY()	
35	=ACTIVATE(A9)	
36	=SELECT(I(TOTAL_Ramp))	
37	=PASTE.SPECIAL(3,1,FALSE,TRUE)	
38		Do another iteration?

	K	L
39	=DIALOG.BOX(Dialog_Box_5)	
40	=RETURN()	Print?
41		
42	Record4 (p)	Save this document?
43	=ECHO(FALSE)	
44	=DIALOG.BOX(Dialog_Box_6)	
45	=IF(K44=FALSE,RETURN(),GOTO(K46))	
46	=IF(I103=1)	
47	=GOTO(A1)	From K38
48	=ELSE.IF(I103=2)	
49	=GOTO(K57)	Does Printing Box
50	=ELSE.IF(I103=3)	Prints Area Sheet.
51	=SAVE.AS?	
52	=ELSE.IF(I103=4)	Provides Printing Options
53	=CLOSE(FALSE)	for big spreadsheets.
54	=GOTO(A171)	
55	=END.IF()	Skips printing.
56	=RETURN()	
57	=IF(I23=2)	
58	=PRINT(1,,,1,FALSE,FALSE,1,FALSE,1)	Prints totals.
59		
60	=ELSE()	
61	=DIALOG.BOX(Dialog_Box_8)	
62		
63	=IF(I122=1)	Prints totals and Geographic
64	=RETURN()	Areas.
65		
66	=ELSE.IF(I\$122=2)	
67	=SELECT(IPrint_Totals)	
68	=SET.PRINT.AREA()	Prints totals and Sub-
69	=PRINT(1,,,1,FALSE,FALSE,1,FALSE,1)	Programs.
70		
71	=ELSE.IF(I\$122=3)	
72	=SELECT(IPrint_ToL_Geog)	
73	=SET.PRINT.AREA()	
74	=PRINT(1,,,1,FALSE,FALSE,1,FALSE,1)	
75		Ends printing options. From k52
76	=ELSE.IF(I\$122=4)	

	K	L
77	=SELECT(IPrint_Totals)	
78	=SET.PRINT.AREA()	Ends Printing Block, from k46
79	=PRINT(1,,1,FALSE,FALSE,1,FALSE,1)	
80	=SELECT(IPSP_Print)	
81	=SET.PRINT.AREA()	
82	=PRINT(1,,1,FALSE,FALSE,1,FALSE,1)	
83	=END.IF()	
84		
85	=END.IF()	
86		
87		
88	=RETURN()	

	M	N
1	One Area (a)	Comments
2	=ECHO(FALSE)	Turns off screen.
3		
4	=DIRECTORY(A2)	Sets directory to working directory as listed in cell A2.
5	=LEFT(RIGHT(NOW(),7),3)	
6	=ACTIVATE(\$A\$8)	Provides names for worksheet and temporary file.
7	=SELECT(\$A\$9)	
8	=FORMULA("TMP"&\$M\$5&"_xls")	
9	=SELECT(\$A\$10)	
10	=FORMULA("TMP"&\$M\$5&"_T.xls")	Keeps user from overwriting main spreadsheet.
11	=OPEN("AGUSER.XLS")	
12	=SAVE.AS(\$A\$9)	
13	=PROTECT.DOCUMENT?(FALSE,FALSE,FALSE)	
14		
15	=DIALOG.BOX(Dialog_Box_9)	Call Dialog Box 9
16	=IF(OR(Choice_Change_Base=2,M15=FALSE))	If not changing current plan then skip to next Dialog Box.
17	= GOTO(M21)	
18	=ELSE()	
19	= Change_Current()	Call function "Change_Current()
20	=END.IF()	
21		
22	=ACTIVATE(\$A\$9)	Paste "Current_Plan" into "Proposed_Plan" area. This is done to provide full plan after altering selected areas.
23	=SELECT(Current_Plan)	
24	=COPY()	
25	=SELECT(IProposed_Plan)	
26	=PASTE.SPECIAL(3,1,FALSE,FALSE)	
27		
28	=DIALOG.BOX(Dialog_Box_13)	Dialog Box asks which areas the user would like to alter.
29	=IF(M28=FALSE,GOTO(A26))	
30		
31	=ACTIVATE(\$A\$9)	
32	=IF(I210=1,SELECT(ICurrEur),IF(I210=2,SELECT(ICurrCON),IF(I210=3,SELECT(ICurrKor),IF(I210=4,SELECT(ICurrPan),IF(I210=5,SELECT(COPY()	Nested "IF" statements to determine which area was selected, to copy and paste the appropriate plans.
33		
34	=IF(I210=1,SELECT(IEuropeRamp),IF(I210=2,SELECT(ICONUSRamp),IF(I210=3,SELECT(IKoreaRamp),IF(I210=4,SELECT(IPanamaRamp)	
35	=ACTIVATE(\$A\$8)	
36	=SELECT(Ramps3)	
37	=PASTE.SPECIAL(3,1,FALSE,TRUE)	
38		
39	=IF(I210=1,FORMULA("Europe",H247),IF(I210=2,FORMULA("CONUS",H247),IF(I210=3,FORMULA("Korea",H247),IF(I210=4,FORMU	Nested "IF" statement to determine which area name to paste into Dialog Box 14.
40		
41		
42		
43	=DIALOG.BOX(Dialog_Box_14)	Dialog Box allows user to alter

	M	N
44	=IF(M43=FALSE,GOTO(M28))	current plan for a selected geographical area.
45	=ACTIVATE(\$A\$8)	
46	=SELECT(Ramps3)	
47	=COPY()	
48	=ACTIVATE(\$A\$9)	
49	=PASTE.SPECIAL(3,1,FALSE,TRUE)	
50	=GOTO(M28)	
51		
52	=SELECT((Print_Totals)	Selects "Print_Totals" area or temporary file, copies it,
53	=COPY()	and pastes it back over itself.
54	=PASTE.SPECIAL(3,1,FALSE,FALSE)	This is done to preserve the results while deleting the bulk of the spreadsheet.
55		
56		
57	Original Position of Clearing Block (n64:n67)	
58		
59		
60	=VLIN(-65)	
61	=SELECT(A37)	
62	=DIALOG:BOX(Dialog_Box_5)	
63		
64	=RETURN()	

	O	P
1	Accessories	Comments
2	=ALERT("Find and open the file "AGUSER.XLS". It should be in the same directory as the one you used to start this program.")	This subroutine interactively
3	=OPEN?	has the user input his
4	=ACTIVATE(A8)	working directory, saves it,
5	=DIRECTORY()	and continues to run the
6	=SELECT(O5)	macro.
7	=COPY()	
8	=SELECT(A2)	
9	=PASTE.SPECIAL(3,1,FALSE,FALSE)	
10	=ACTIVATE("AGUSER.XLS")	
11	=CLOSE(FALSE)	
12	=GOTO(A16)	
13		
14		
15	=INPUT("The name of the file has been changed. Please enter the name of the file",2,,A8)	Same as above, except this
16	=IF(O15=FALSE,RETURN(),GOTO(O17))	is for the file name.
17		
18	=SELECT(O15)	
19	=COPY()	
20	=SELECT(A8)	
21	=PASTE.SPECIAL(3,,FALSE,FALSE)	
22	=GOTO(A10)	
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		
33		
34	Change Current End Strengths FUNCTION	
35		
36	=DIALOG.BOX(Dialog_Box_10)	Call Dialog Box 10
37	=IF(OR(O36=FALSE,147=7),RETURN())	Actions if cancel button is clicked
38		or "done" is selected.
39	=IF(1147=1,FORMULA("Total",H187),IF(1147=2,FORMULA("Europe",H187),IF(1147=3,FORMULA("CONUS",H187),IF(1147=4,FORM	Nested if statements to determine
40		choice of MACOM.
41	=ACTIVATE(\$A\$9)	Activate Temp Worksheet
42	=IF(1147=1,SELECT(ICurrTot),IF(1147=2,SELECT(ICurrEur),IF(1147=3,SELECT(ICurrCON),IF(1147=4,SELECT(ICurrKor),IF(1147=5,SI	Nested if statements to select prope
43	=COPY()	MACOM End Strength plan.

	O	P
44	=ACTIVATE(\$A\$8)	Activate Macro92
45	=SELECT(Ramps2)	Selects Ramps2 area to paste
46	=PASTE.SPECIAL(3,1,FALSE,TRUE)	current MACOM plan.
47		
48	=DIALOG.BOX(Dialog_Box_11)	Call Dialog Box 11
49	=IF(O48=FALSE,GOTO(O36))	
50		
51	=SELECT(Ramps2)	
52	=COPY()	
53	=ACTIVATE(\$A\$9)	
54	=IF(I147=1,SELECT(ICurrTot),IF(I147=2,SELECT(ICurrEur),IF(I147=3,SELECT(ICurrCON),IF(I147=4,SELECT(ICurrKor),IF(I147=5,SE	Nested if statements to select proper
55	=PASTE.SPECIAL(3,1,FALSE,TRUE)	MACOM End Strength plan for pasting
56		to temporary plan.
57	=GOTO(O36)	Back to call for Dialog Box 10
58		
59	=RETURN()	Returns control back to point in
60		Macro where function was called.