Air Traffic Control

Complexity Formula for Terminal and En Route Pay Setting by Facility

June 2009

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Terminal and En Route

STATEMENT OF COVERAGE

This pay setting standard is limited to the employees covered by the collective bargaining agreement between NATCA and the FAA for Air Traffic Control Specialists (ATCs), Traffic Management Coordinators/Specialists (TMC/Ss), and NOTAM Specialists (NOTAMs).

Note: When terminal and en route air traffic control specialists are temporarily assigned to uncovered positions, their position of record remains covered by this complexity formula for pay setting standard.

FUTURE ADJUSTMENTS TO THE EVALUATION CRITERIA

Because of the many variables which may affect the difficulty and complexity of air traffic control work (such as future technological changes, changes in the aviation industry and modification or extension of air traffic control services), it may be necessary to periodically adjust the air traffic density and complexity measures for different categories of facilities.

While there is currently a linkage of the conceptual descriptions of the various facility pay setting levels with their associated index ranges, this linkage is not expected to last indefinitely. The continued validity of this linkage will be regularly assessed by NATCA and FAA. The Parties will negotiate changes to the complexity formula and/or facility pay levels resulting from data source changes used in determining facility traffic count indices and facility pay levels. No changes to facility pay levels due to data source changes will be implemented until negotiations have been completed.

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APPLICATION OF COMPLEXITY FORMULA FOR PAY SETTING

The complexity formula for pay setting applies to each facility as a whole.

Facility complexity-formula-based pay levels (breakpoints) are provided in Appendix 1. Employee's pay is set in accordance with Article 108 of the Parties' Collective Bargaining Agreement and the pay level of the facility to which the employee is assigned.

PART I - TERMINAL FACILITIES

CATEGORIES OF AIR TRAFFIC CONTROL TERMINALS

There are six categories of ATC terminals that have been classified by the FAA. They have been identified by the control services provided. Any changes to these classifications require appropriate negotiations in accordance with the parties' collective bargaining agreement:

1. TOWER WITHOUT RADAR.
2. COMBINATION NON-RADAR APPROACH CONTROL AND TOWER WITHOUT RADAR.
3. TOWER WITH RADAR.
4. COMBINATION RADAR APPROACH CONTROL AND TOWER WITH RADAR:.
5. TERMINAL RADAR APPROACH CONTROL (TRACON).
6. COMBINED TRACON FACILITY.

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THE INFLUENCE OF ENVIRONMENTAL AND OPERATIONAL COMPLEXITY FACTORS

These factors are:

- The varying mix in speed and performance characteristics of aircraft using the airport or transiting airspace under the control of the terminal;
- The airport configuration in terms of runway and taxiway layout, lengths and capacities;
- Provision of control services for secondary airports;
- Proximity of other airports;
- Class of airspace;
- Weather observation responsibilities;
- Terrain;
- Interaction with foreign countries; and
- Military operations.

The influence on the level of difficulty for pay setting varies depending on the kind of complexity, the category of terminal, and the level of stress associated with the control work at that terminal. Because many of these factors are static in nature and only become dynamic as air traffic congestion increases, they are considered in relation to varying levels of air traffic congestion. For example, the most complex runway configuration poses few or no problems to controllers at terminals with very light air traffic. However, it has a significant impact on the overall complexity of a controller's position at higher levels of air traffic congestion. The difference in air traffic congestion and other complexity factors is recognized in the complexity criteria discussed in the section titled "Weighting and Modifying the Traffic Count to Reflect Complexity."

THE INFLUENCE OF TRAFFIC CONGESTION ON COMPLEXITY

It is the level of sustained congestion of air traffic that is significant, rather than the total annual volume of air traffic handled by a terminal. For example, aircraft which are permitted to practice touch-and-go or stop-and-go landings during periods of very light air traffic may contribute significantly to the annual volume of operations handled by a terminal. Usually such operations performed under these conditions have little influence on the overall difficulty and complexity of the control environment.

Therefore, it is not the total annual volume of control operations that primarily influences the level of complexity of terminal positions. It is the level of congestion of air traffic which controllers must handle on a sustained basis that has the most significant influence on the complexity of these positions.

The specific methods used to measure level of air traffic congestion at the various terminals are described in detail in the section titled "Sustained Traffic Index."

COMPLEXITY FORMULA

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SUSTAINED TRAFFIC INDEX

Most terminals experience their busiest air traffic during the day and evening hours with operations declining sharply during the very late evening and early morning hours. Operations at individual terminals also vary from day-to-day and during different seasons of the year. For example, a tower without radar generally experiences its busiest air traffic during weekends in the summer, and its lightest air traffic on weekdays and during the winter months.

The formula below addresses these daily and seasonal variances in air traffic by putting them in proper perspective in developing the sustained traffic index. It measures the busiest air traffic periods while also recognizing the influence of sustained levels of air traffic on the terminal facility.

The segment of the work year measured is the busiest 1,830 hours and the next busiest 1,830 hours in terms of total aircraft handled in a consecutive 365 day period. The use of 1,830 hours is based on the realization that at most facilities the greatest concentrations of air traffic occur during 10 hours, rather than 12 hours, 16 hours, or the full period a facility is open over a 24-hour day. Half the days in a year (183) are multiplied by the 10 hours to derive 1,830 hours.

In those facilities where there is very little decline in air traffic levels between the busiest 1,830 hours and the second busiest 1,830 hours, the count is adjusted to reflect the sustained level of air traffic. In those facilities where there is a substantial difference between the peak and the next level of air traffic (i.e. the second busiest 1,830 hours) the count is adjusted to reflect that the high level of air traffic is not sustained.

The formula for measuring the facility's sustained traffic index (D_t) is:

$$D_t = 1 + (C_{av2} / C_{av1})$$

The formula for deriving the facility's Traffic Count Index is:

$$D_t \times W_{av1} = \text{Traffic Count Index}$$

where:

C_{av1} *is the average unweighted hourly count for the busiest 1,830 hours*

C_{av2} *is the average unweighted hourly count for the second busiest 1,830 hours*

W_{av1} *is the modified average weighted hourly count for the busiest 1,830 hours.*

FLIGHT OPERATIONS COUNTED

All types of flight operations at terminals are counted in computing the average weighted hourly count. All VFR and IFR aircraft arriving or departing an airport are counted, including low approaches, stop-and-go or touch-and-go operations, practice instrument approaches, and missed approaches. All overflights which transit the terminal's airspace, VFR advisories, and other required special VFR (SVFR) services are counted.

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WEIGHTING AND MODIFYING THE TRAFFIC COUNT TO REFLECT COMPLEXITY

As pointed out earlier, varying weights are assigned to different flight operations to recognize the difference in the complexity of the facilities related to the different operations, and the weighted air traffic count is further modified to recognize other factors which significantly influence the level of complexity of the facility.

I. TOWER WITHOUT RADAR

For each average hour of operation (i.e., the 1830 busiest hours divided by 1830):

A. Each IFR/SVFR arrival, departure or VFR practice instrument approach count is given a weight of 1.50.

B. Each VFR itinerant or local arrival or departure count is given a weight of 1.00.

C. The hourly counts for (A) and (B) are added together to obtain the combined arrival and departure count at the primary airport.

D. This combined itinerant and local hourly operations count is then multiplied by a runway factor:

1. 1.15 if the airport has crossing runways.

2. 1.10 if the airport has converging runways.

3. 1.05 if the airport has a single runway, including parallel runways that are separated by 2500 feet or less.

4. 1.00 if the airport has parallel runways.

(Note: If two or more configurations exist at one airport, the highest multiplier shall be used; if a runway is not in a commissioned status as defined in the Airport / Facilities Directory it should not be considered in determining runway configuration.)

E. Each IFR/SVFR overflight count is given a weight of 1.25.

F. Each VFR overflight count is given a weight of 1.00.

G. The hourly counts for (D), (E) and (F) are added together to obtain the average weighted hourly count.

H. For each day, and the prior 364 days (i.e., use a 365 day count), calculate the percent that military air traffic comprises of total air traffic. Divide that percent figure by four, and then multiply by the average weighted hourly count derived in (G). This will yield the military add-on count. (Example: The military air traffic count equals 20% of the total air traffic count; (G) = 100). The formula is:

(.2 / 4 = .05 x 100 = 5)

Note: Until appropriate automation capabilities are established, the military mix calculations will be based on the most recent yearly APO/OPSNET data available. I. For each day, and the prior 364 days (i.e., use a 365 day count) calculate:

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1. The percent of total air traffic that is:

   (a) air carrier and military traffic combined

   (b) general aviation traffic

   (c) air taxi traffic

2. *Note: Until appropriate automation capabilities are established, the aircraft mix calculations will be based on the most recent yearly APO/OPSNET data available.* Determine which of the two, i.e., air carrier and military traffic combined or general aviation traffic, constitutes a lower percentage of the total air traffic.

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3. Add the air taxi traffic to the lower of the two, i.e. air carrier and military traffic combined or general aviation traffic.

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4. After adding the air taxi traffic to either the air carrier and military traffic combined or general aviation traffic, calculate the percent traffic mix of the two categories of air traffic (i.e., the one including air taxi and the one excluding air taxi).

5. Take the lower percentage of the two figures derived in (4) above and divide it by four, then multiply by the average weighted hourly count derived in (G). This will yield the traffic mix add-on count.

   Example:

   1. air carrier and military traffic combined = 58%
   2. general aviation traffic = 32%
   3. air taxi traffic = 10%
   4. a) general aviation (32%) + air taxi (10%) = 42%

      b) air carrier + military = 58%
   5. The lower of the two percentages (4a or 4b) = 42%
   6. Average weighted hourly count (G) = 100
   7. .42 / 4 = .105 x 100 = 10.5

J. Each facility:

   1. If Class B airspace = 25%; if Class C airspace = 10%; if Class D airspace = 0%.

      (Note: If two or more classes of airspace exist, the highest multiplier shall be used.)
   2. If it has ASOS = .5%
   3. If it has LAWRS = 1%
   4. If it has terrain within its airspace that is 4000 feet or greater above its primary airport field elevation = 5%
   5. a) If it has adjacent airspace to and interacts with one (1) foreign country = 1%

      b) If it has adjacent airspace to and interacts with two (2) foreign

countries = 2%

c) If it has adjacent airspace to and interacts with three (3) or more foreign countries = 4.5%.

6. If it has 300,000 total facility operations or more and is 10 miles or less from other airports with 300,000 total facility operations or more, for each such airport = 2.5%.

Add all applicable percentages in (J) 1 through 6 and then multiply that total percentage by the average weighted hourly count derived in (G). This will yield the facility profile add-on count.

Example:

1. Class D airspace = 0%
2. ASOS = .5%
3. LAWRS = 1%
4. Terrain = 5%
5. Foreign country (2) = 2%
6. Airport proximity = 0%
7. Total = 8.5%
8. Average weighted hourly count (G) = 100
9. .085 x 100 = 8.5

K. Add the military add-on count derived in (H) above, the mix of traffic add-on count derived in (I) above and the facility profile add-on count derived in (J) above to the average weighted hourly count derived in (G) to yield the modified average weighted hourly count.

Example:

1. Average weighted hourly count (G) = 100;
2. Military add-on count (H) = 5;
3. Mix of traffic count (I) = 10.5;
4. Facility profile count (J) = 8.5

Modified average weighted hourly count (K) = 5 + 10.5 + 8.5 + 100 = 124

L. Calculate the traffic count index as described earlier under the section titled "Sustained Traffic Index."

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The level of difficulty and complexity of the Tower Without Radar is determined by the traffic count index described earlier.

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II. COMBINATION NON RADAR APPROACH CONTROL TERMINAL AND TOWER WITHOUT RADAR

Because this is a combined facility, the operations measured cover both those of the tower and of the approach control.

IIa. TOWER WITHOUT RADAR

Apply the same weights and calculations as shown for tower without radar in section I, above.

IIb. NON RADAR APPROACH CONTROL

For each average hour of operation (i.e., the 1830 busiest hours divided by 1830):

A. Each IFR/SVFR arrival, departure, or VFR practice instrument approach count at the primary airport is given a weight of 1.50.

B. Each VFR arrival or departure count at the primary airport is given a weight of 1.00

C. The hourly counts for (A) and (B) are added together to obtain the combined arrival and departure count at the primary airport.

D. This combined arrival and departure hourly count at the primary airport is then multiplied by a runway factor:

1. 1.15 if the airport has crossing runways.
2. 1.10 if the airport has converging runways.
3. 1.05 if the airport has a single runway, including parallel runways that are separated by 2500 feet or less.
4. 1.00 If the airport has parallel runways.

(Note: If two or more configurations exist at one airport, the highest multiplier shall be used; if a runway is not in a commissioned status as defined in the Airport / Facilities Directory it should not be considered in determining runway configuration.)

E. Each IFR/SVFR arrival, departure, or VFR practice instrument approach count at secondary airports 15 miles or less from the primary airport is given a weight of 1.50.

F. Each IFR/SVFR arrival, departure, or VFR practice instrument approach count at secondary airports more than 15 miles from the primary airport is given a weight of 1.25.

G. Each VFR arrival or departure count at secondary airports is given a weight of 1.00.

H. Each IFR/SVFR overflight count is given a weight of 1.25.

I. Each VFR overflight/advisory count is given a weight of 1.00.

J. The hourly counts for all operations (D) through (I) are added together to obtain the average weighted hourly count.

K. For each day, and the prior 364 days (i.e., use a 365 day count), calculate the percent that military air traffic comprises of total air traffic. Divide that percent figure by four, and then multiply by the average weighted hourly count derived in (J). This will yield the military add-on count. (Example: The military air traffic count equals 20% of the total air traffic count; the average weighted hourly count (J) = 100). The formula is:

(.2 / 4 = .05 x 100 = 5)

Note: Until appropriate automation capabilities are established, the military mix calculations will be based on the most recent yearly APO/OPSNET data available.

L. For each day, and the prior 364 days (i.e., use a 365 day count) calculate:

1. The percent of total traffic that is:

   (a) air carrier and military traffic combined

   (b) general aviation traffic

   (c) air taxi traffic

   Note: Until appropriate automation capabilities are established, the aircraft mix calculations will be based on the most recent yearly APO/OPSNET data available.

2. Determine which of the two, i.e., air carrier and military traffic combined or general aviation traffic, constitutes a lower percentage of the total traffic.

3. Add the air taxi traffic to the lower of the two, i.e., air carrier and military traffic combined or general aviation traffic.

4. After adding the air taxi traffic to either the air carrier and military traffic combined or general aviation traffic, calculate the percent traffic mix of the two categories of air traffic (i.e., the one including air taxi and the one

excluding air taxi).

5. Take the lower percentage of the two figures derived in (4) above and divide it by four, then multiply by the average weighted hourly count derived in (J). This will yield the traffic mix add-on count.

Example:

1. air carrier and military combined traffic = 58%
2. general aviation traffic = 32%
3. air taxi traffic = 10%
4. a) general aviation (32%) + air taxi (10%) = 42%

   b) air carrier + military = 58%
5. the lower of the two percentages (4a or 4b) = 42%
6. average weighted hourly count (J) = 100
7. .42 / 4 = .105 x 100 = 10.5

M. Each facility:

1. If Class B airspace = 25%; if Class C/TRSA/ARSA airspace = 10%; if Class D airspace = 0%.

   (Note: If two or more classes of airspace exist, the highest multiplier shall be used.)

2. If it has terrain within its airspace that is 4000 feet or greater above its primary airport field elevation = 5%

3. a) If it has adjacent airspace to and interacts with one (1) foreign country = 1%

   b) If it has adjacent airspace to and interacts with two (2) foreign countries = 2%

   c) If it has adjacent airspace to and interacts with three (3) or more foreign countries = 4.5%

Add all applicable percentages in (M) 1 through 3 and then multiply that total percentage by the average weighted hourly count derived in (J). This will yield the facility profile add-on count.

Example:

1. Class D airspace = 0%
2. Terrain = 5%
3. Foreign country (2) = 2%
4. Total = 7%
5. Average weighted hourly count (J) = 100
6. .07 x 100 = 7

N. Add the military add-on count derived in (K) above, the mix of traffic add-on count derived in (L) above and the facility profile add-on count derived in (M) above to the average weighted hourly count derived in (J) to yield the modified average weighted hourly count (N).

Example:

1. Average weighted hourly count (J) = 100
2. Military add-on count (K) = 5
3. Mix of traffic count (L) = 10.5
4. Facility profile count (M) = 7

Modified average weighted hourly count (N) = 5 + 10.5 + 7 + 100 = 122.5

O. Calculate the traffic count index as described earlier under the section titled "Sustained Traffic Index".

IIc. COMBINED COUNT

Add the tower without radar's traffic count index to the non radar approach control's traffic count index to obtain a combined traffic count index.

The level of difficulty and complexity of the Combination Non-Radar Approach Control and Tower Without Radar respective work situations is determined by the traffic count index described earlier.

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III. TOWER WITH RADAR

For each average hour of operation (i.e., the 1830 busiest hours divided by 1830):

A. Each IFR/SVFR arrival, departure, or VFR practice instrument approach count is given a weight of 1.50.

B. Each VFR itinerant or local arrival or departure count is given a weight of 1.00.

C. The hourly counts for (A) and (B) are added together to obtain the combined arrival and departure count at the primary airport.

D. This combined itinerant and local hourly count is then multiplied by a runway factor:

1. 1.15 if the airport has crossing runways.
2. 1.10 if the airport has converging runways.
3. 1.05 if the airport has a single runway, including parallel runways that are separated by 2500 feet or less.
4. 1.00 if the airport has parallel runways.

(Note: If two or more configurations exist at one airport, the highest multiplier shall be used; if a runway is not in a commissioned status as defined in the Airport / Facilities Directory it should not be considered in determining runway configuration.)

E. Each IFR/SVFR overflight count is given a weight of 1.25.

F. Each VFR overflight count is given a weight of 1.00.

G. The hourly counts for (D), (E) and (F) are added together to obtain the average weighted hourly count.

H. For each day, and the prior 364 days (i.e., use a 365 day count), calculate the percent that military air traffic comprises of total air traffic. Divide that percent figure by four, and then multiply by the average weighted hourly count derived in

(G). This will yield the military add-on count. (Example: The military traffic count equals 20% of the total traffic count; the average weighted hourly count (G) = 100). The formula is:

(.2 / 4 = .05 x 100 = 5)

Note: Until appropriate automation capabilities are established, the military mix calculations will be based on the most recent yearly APO/OPSNET data available.

I. For each day and the prior 364 days (i.e., use a 365 day count) calculate:

1. The percent of total traffic that is:

(a) air carrier and military traffic combined

(b) general aviation traffic

(c) air taxi traffic

Note: Until appropriate automation capabilities are established, the aircraft mix calculations will be based on the most recent yearly APO/OPSNET data available.

2. Determine which of the two, i.e., air carrier and military traffic combined or general aviation traffic, constitutes a lower percentage of the total traffic.

3. Add the air taxi traffic to the lower of the two, i.e., air carrier and military traffic combined or general aviation traffic.

4. After adding the air taxi traffic to either the air carrier and military traffic combined or general aviation traffic, calculate the percent traffic mix of the two categories of air traffic (i.e., the one including air taxi and the one excluding air taxi).

5. Take the lower percentage of the two figures derived in (4) above and divide it by four, then multiply by the average weighted hourly count derived in (G). This will yield the traffic mix add-on count.

Example:

1. air carrier and military traffic combined = 58%

2. general aviation traffic = 32%

3. air taxi traffic = 10%

4. a) general aviation (32%) + air taxi (10%) = 42%

b) air carrier + military = 58%

5. The lower of the two percentages (4a or 4b) = 42%

6. Average weighted hourly count (G) = 100

7. .42 / 4 = .105 x 100 = 10.5

J. Each facility:

1. If Class B airspace = 25%; if Class C/TRSA/ARSA airspace = 10%; if Class D airspace = 0%.

(Note: If two or more classes of airspace exist, the highest multiplier shall be used.)

2. If it has ASOS = .5%

3. If it has LAWRS = 1%

4. If it has terrain within its airspace that is 4000 feet or greater above its primary airport field elevation = 5%;

5. a) If it has adjacent airspace to and interacts with one (1) foreign country = 1%;

b) If it has adjacent airspace to and interacts with two (2) foreign countries = 2%;

c) If it has adjacent airspace to and interacts with three (3) or more foreign countries = 4.5%;

6. If it has 300,000 total facility operations or more and is within 10 miles of other airports with 300,000 total facility operations or more, for each such airport = 2.5%.

Add all applicable percentages in (J) 1 through 6 and then multiply that total percentage by the average weighted hourly count derived in (G). This will yield the facility profile add-on count.

Example:

1. Class B airspace = 25%

2. ASOS = .5%

3. LAWRS = 1%

4. Terrain = 0%

5. Foreign country = 0%

6. Airport proximity (1) = 2.5%

7. Total = 29%

8. Average weighted hourly count (G) = 100

9. .29 x 100 = 29

K. Add the military add-on count derived in (H) above, the mix of traffic add-on count derived in (I) above and the facility profile add-on count derived in (J) above to the average weighted hourly count derived in (G) to yield the modified average weighted hourly count.

Example:

1. Average weighted hourly count (G) = 100;

2. Military add-on count (H) = 5

3. Mix of traffic count (I) = 10.5

4. Facility profile count (J) = 29

Modified average weighted hourly count (K) = 5 + 10.5 + 29 + 100 = 144.5

L. Calculate the traffic count index as described earlier under the section titled "Sustained Traffic Index."

The level of difficulty and complexity of the Towers With Radar is determined by the traffic count index described earlier.

IV. COMBINATION RADAR APPROACH CONTROL TERMINAL AND TOWER WITH RADAR

Because this is a combined facility, the operations measured cover both those of the tower and of the approach control.

IVa. TOWER WITH RADAR

Apply the same weights and calculations as shown for tower with radar in section III, above.

IVb. TERMINAL RADAR APPROACH CONTROL (TRACON)

For each average hour of operation (i.e., the 1830 busiest hours divided by 1830):

A. Each IFR/SVFR arrival, departure, or VFR practice instrument approach count at the primary airport is given a weight of 1.50.

B. Each VFR arrival or departure count at the primary airport is given a weight of 1.00

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C. The hourly counts for (A) and (B) are added together to obtain the combined arrival and departure count at the primary airport.

D. This combined arrival and departure hourly count at the primary airport is then multiplied by a runway factor:

1. 1.15 if the airport has crossing runways.

2. 1.10 if the airport has converging runways.

3. 1.05 if the airport has a single runway, including parallel runways that are separated by 2500 feet or less.

4. 1.00 if the airport has parallel runways.

(Note: If two or more configurations exist at one airport, the highest multiplier shall be used; if a runway is not in a commissioned status as defined in the Airport / Facilities Directory it should not be considered in determining runway configuration.)

E. Each IFR/SVFR arrival, departure, or VFR practice instrument approach count at secondary airports 15 miles or less from the primary airport is given a weight of 1.50.

F. Each IFR/SVFR arrival, departure, or VFR practice instrument approach count at secondary airports more than 15 miles from the primary airport is given a weight of 1.25.

G. Each VFR arrival or departure count at secondary airports is given a weight of 1.00.

H. Each IFR/SVFR overflight count is given a weight of 1.25.

I. Each VFR overflight count is given a weight of 1.00.

J. The hourly counts for all operations (D) through (I) are added together to obtain the average weighted hourly count.

K. For each day and the prior 364 days (i.e., use a 365 day count), calculate the percent that military air traffic comprises of total air traffic. Divide that percent figure by four, and then multiply by the average weighted hourly count derived in

(J). This will yield the military add-on count (K). (Example: The military traffic count equals 20% of the total traffic count; the average weighted hourly count (J) = 100). The formula is:

(.2 / 4 = .05 x 100 = 5)

Note: Until appropriate automation capabilities are established, the military mix calculations will be based on the most recent yearly APO/OPSNET data available.

L. For each day and the prior 364 days (i.e., use a 365 day count) calculate:

1. The percent of total TRACON traffic that is:

   (a) air carrier and military traffic combined

   (b) general aviation traffic

   (c) air taxi traffic

   Note: Until appropriate automation capabilities are established, the aircraft mix calculations will be based on the most recent yearly APO/OPSNET data available.

2. Determine which of the two, i.e., air carrier and military traffic combined or general aviation traffic, constitutes a lower percentage of the total traffic.

3. Add the air taxi traffic to the lower of the two, i.e,. air carrier and military traffic combined or general aviation traffic.

4. After adding the air taxi traffic to either the air carrier and military traffic combined or general aviation traffic, calculate the percent traffic mix of the two categories of traffic (i.e., the one including air taxi and the one excluding air taxi).

5. Take the lower percentage of the two figures derived in (4) above and divide it by four, then multiply by the average weighted hourly count derived in (J). This will yield the traffic mix add-on count.

Example:

1. air carrier and military traffic combined = 58%

2. general aviation traffic = 32%

3. air taxi traffic = 10%

4. a) general aviation (32%) + air taxi (10%) = 42%

   b) air carrier + military = 58%

5. The lower of the two percentages (4a or 4b) = 42%

6. Average weighted hourly count (J) = 100

7. .42 / 4 = .105 x 100 = 10.5

M. Each facility:

1. If Class B airspace = 25%; if Class C/TRSA/ARSA airspace = 10%; if Class D airspace = 0%.

   (Note: If two or more classes of airspace exist, the highest multiplier shall be used.)

2. If it has terrain within its airspace that is 4000 feet or greater above its primary airport field elevation = 5%

3. a) If it has adjacent airspace to and interacts with one (1) foreign country = 1%

   b) If it has adjacent airspace to and interacts with two (2) foreign countries = 2%

   c) If it has adjacent airspace to and interacts with three (3) or more foreign countries = 4.5%

Add all applicable percentages in (M) 1 through 3 and then multiply that total percentage by the average weighted hourly count derived in (J). This will yield the facility profile add-on count.

Example:

1. Class B airspace = 25%

2. Terrain = 0%

3. Foreign country = 0%

4. Total = 25%

5. Average weighted hourly count (J) = 100

6. .25 x 100 = 25

N. For each day and the prior 364 days (i.e., use a 365 day count) calculate the

percent that separate a non-radar sector (i.e. area) traffic comprises of total air traffic. Divide that percent figure by four, and then multiply by the average weighted hourly count derived in (J) to yield the non radar count.

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Example:

1. Percent non-radar sector traffic is of total traffic = 8%

2. Average weighted hourly count (J) = 100

3. 100 x .08 = 8

4. 8 / 4 = 2

O. Add the military add-on count derived in (K) above, the mix of traffic add-on count derived in (L) above, the facility profile add-on count derived in (M) above and the non radar add-on derived in (N) above to the average weighted hourly count derived in (J) to yield the modified average weighted hourly count (O).

Example:

1. Average weighted hourly count (J) = 100

2. Military add-on count (K) = 5

3. Mix of traffic count (L) = 10.5

4. Facility profile count (M) = 25

5. Non-radar add-on count (N) =2

Modified average weighted hourly count (O) = 5 + 10.5 + 25 + 2 + 100 = 142.5

P. Calculate the traffic count index as described earlier under the section titled "Sustained Traffic Index.".

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IVc. COMBINED COUNT

Add the tower with radar traffic count index to the radar approach control terminal traffic count index to obtain a combined count index.

The level of difficulty and complexity of the Combination Radar Approach Control Terminal and Tower with Radar is determined by the traffic count index described earlier.

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V. TERMINAL RADAR APPROACH CONTROL (TRACON)

Apply the same weights and calculations as shown for radar approach control terminal in section IVb. above.

The level of difficulty and complexity of the combination radar approach control terminal and tower with radar is determined by the traffic count index described earlier.

VI. COMBINED TRACON FACILITY

For each average hour of operation (i.e., the 1830 busiest hours divided by 1830):

A. Each IFR/SVFR arrival, departure, or VFR practice instrument approach count at a large hub airport:

1. 15 miles or less from another large hub airport is given a weight of 2.25

2. More than 15 miles from all other large hub airports is given a weight of 1.75

B. Each IFR/SVFR arrival, departure, or VFR practice instrument approach count at secondary airports 15 miles or less from any large hub airport is given a weight of 1.50.

C. Each IFR/SVFR arrival, departure or VFR practice instrument approach count at secondary airports more than 15 miles from all large hub airports is given a weight of 1.25.

D. Each VFR arrival or departure count:

1. At a large hub airport or any airport 15 miles or less from any large hub airport is given a weight of 1.25.

2. At any airport more than 15 miles from all large hub airports is given a weight of 1.00.

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E. Each IFR/SVFR overflight count is given a weight of 1.25.

F. Each VFR overflight count is given a weight of 1.00.

G. The hourly counts for all operations (A) through (F) are added together to obtain the average weighted hourly count.

H. For each day and the prior 364 days (i.e., use a 365 day count), calculate the percent that military air traffic comprises of total air traffic. Divide that percent figure by four, and then multiply by the average weighted hourly count derived in (G). This will yield the military add-on count. (Example: The military traffic count equals 20% of the total traffic count; the average weighted hourly count (G) = 100). The formula is:

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(.2 / 4 = .05 x 100 = 5)

Note: Until appropriate automation capabilities are established, the military mix

calculations will be based on the most recent yearly APO/OPSNET data available.

I. For each day and the prior 364 days (i.e., use a 365 day count) calculate:

1. The percent of total combined TRACON traffic that is:

   (a) air carrier and military traffic combined

   (b) general aviation traffic

   (c) air taxi traffic

   Note: Until appropriate automation capabilities are established, the aircraft mix calculations will be based on the most recent yearly APO/OPSNET data available.

2. Determine which of the two, i.e., air carrier and military traffic combined or general aviation traffic, constitutes a lower percentage of the total traffic.

3. Add the air taxi traffic to the lower of the two, i.e. air carrier and military traffic combined or general aviation traffic.

4. After adding the air taxi traffic to either the air carrier and military traffic combined or general aviation traffic, calculate the percent traffic mix of the two categories of traffic (i.e., the one including air taxi and the one excluding air taxi).

5. Take the lower percentage of the two figures derived in (4) above and divide it by four, then multiply by the average weighted hourly count derived in (G). This will yield the traffic mix add-on count.

Example:

1. air carrier and military traffic combined = 58%

2. general aviation traffic = 32%

3. air taxi traffic = 10%

4. a) general aviation (32%) + air taxi (10%) = 42%

   b) air carrier + military = 58%

5. The lower of the two percentages (4a or 4b) = 42%

6. Average weighted hourly count (G) = 100

7. .42 / 4 = .105 x 100 = 10.5

J. Each facility:

1. If Class B airspace = 25%; if Class C/TRSA/ARSA airspace = 10%; if Class D airspace = 0%.

   (Note: If two or more classes of airspace exist, the highest multiplier shall be used.)

2. If it has terrain within its airspace that is 4000 feet or greater above its primary airport field elevation = 5%

3. a) If it has adjacent airspace to and interacts with one (1) foreign country = 1%

   b) If it has adjacent airspace to and interacts with two (2) foreign countries = 2%

   c) If it has adjacent airspace to and interacts with three (3) or more foreign countries = 4.5%

Add all applicable percentages in (J) 1 through 3 and then multiply that total percentage by the average weighted hourly count derived in (G). This will yield the facility profile add-on count.

Example:

1. Class B airspace = 25%
2. Terrain = 0%
3. Foreign country = 0%
4. Total = 25%
5. Average weighted hourly count (G) = 100
6. .25 x 100 = 25

K. For each day and the prior 364 days (i.e., use a 365 day count) calculate the percent that a non-radar sector traffic comprises of total air traffic. Divide that percent figure by four, and then multiply by the average weighted hourly count derived in (G) to yield the non radar count.

Example:

1. Percent non-radar sector traffic is of total traffic = 8%

2. Average weighted hourly count (G) = 100

3. 100 x .08 = 8

4. 8 / 4 = 2

L. Add the military add-on count derived in (H) above, the mix of traffic add-on count derived in (I) above, the facility profile add-on count derived in (J) above, and the non radar add-on derived in (K) above to the average weighted hourly count derived in (G) to yield the modified average weighted hourly count.

Example:

1. Average weighted hourly count (G) = 100

2. Military add-on count (H) = 5

3. Mix of traffic count (I) = 10.5

4. Facility profile count (J) = 25

5. Non radar add-on count (K) = 2

Modified average weighted hourly count (L) = 5 + 10.5 + 25 + 2 + 100 = 142.5

M. Calculate the traffic count index as described earlier under the section titled "Sustained Traffic Index."

The level of difficulty and complexity of the Combined TRACON is determined by the traffic count index described earlier. .

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PART II – AIR ROUTE TRAFFIC CONTROL CENTER (ARTCC) FACILITIES

INFLUENCE OF ENVIRONMENTAL AND OPERATIONAL COMPLEXITY FACTORS

The level of difficulty and complexity of air traffic control work in centers is further influenced

by such factors as:

- Mixtures of transitioning (aircraft climbing, and descending) and primarily level en route air traffic;
- Number of terminals and congestion of air traffic at those terminals in the center's control area and areas adjacent to the center's airspace;
- Military operations.
- The configuration and dimension of the center's control area, converging and crossing air routes, and juxtaposition to international boundaries;
- Mixture of aircraft with varying operating speeds and performance characteristics;
- Terrain features; and
- Oceanic and domestic- over-water traffic.

These factors tend to be present in different centers in various combinations and with varying degrees of intensity. All these factors, whether separately measured or not, take on increasing significance and importance with substantial increases in the congestion of air traffic.

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COMPLEXITY FORMULA**SUSTAINED TRAFFIC INDEX**

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Most ARTCCs experience their busiest air traffic during the day and evening hours with operations declining sharply during the very late evening and early morning hours. Operations at individual ARTCCs may vary slightly from day-to-day and during different seasons of the year.

The formula below addresses these daily and seasonal variances in air traffic by putting them in proper perspective in developing the sustained traffic index. It measures the busiest air traffic periods while also recognizing the influence of sustained levels of air traffic on the ARTCCs facility.

The segment of the work year measured is the busiest 1,830 hours and the next busiest 1,830 hours in terms of total aircraft handled in a consecutive 365 day period. The use of 1,830 hours is based on the realization that at most facilities the greatest concentrations of air traffic density occur during 10 hours, rather than the full 24-hour period a facility is open each day. Half the days in a year (183) are multiplied by the 10 hours to derive 1,830 hours.

In those facilities where there is very little decline in air traffic levels between the busiest 1,830 hours and the second busiest 1,830 hours, the count is adjusted to reflect the sustained level of air traffic. In those facilities where there is a substantial difference between the peak and the next level of air traffic (i.e. the second busiest 1,830 hours) the count is adjusted to reflect that the high level of air traffic is not sustained.

The formula for measuring the facility's sustained traffic index (D_t) is:

$$D_t = 1 + (C_{av2} / C_{av1})$$

The formula for deriving the facility's Traffic Count Index is:

$$D_t \times W_{av1} = \text{Traffic Count Index}$$

where:

C_{av1} is the average unweighted hourly count for the busiest 1,830 hours

C_{av2} is the average unweighted hourly count for the second busiest 1,830 hours

W_{av1} is the modified average weighted hourly count for the busiest 1,830 hours.

FLIGHT OPERATIONS COUNTED

All types of flight operations that occur in center airspace and are handled by center controllers are counted in computing the average weighted hourly count. This includes all IFR arrivals and departures within the center's airspace, overflights, transitional overflights, oceanic and other over water traffic, practice instrument approaches, and VFR advisories. *Note: Aircraft counts are determined through automation capabilities in the NAS computer system and additional automated calculation tools and are the best practical method of determining those counts considering operational workload impacts.*

WEIGHTING AND MODIFYING THE TRAFFIC COUNT TO REFLECT COMPLEXITY

As described earlier, varying weights are assigned to different flight operations to recognize the differences in the complexity of the facilities. The weighted air traffic count is further modified to recognize other factors that significantly influence the level of complexity of the facility.

For each average hour of operation (i.e., the 1830 busiest hours divided by 1830):

A. Each IFR/SVFR departure transferred from approach control is given a weight of 1.50.

B. Each IFR/SVFR departure (including IFR airfiles) and IFR/SVFR aircraft receiving ATC services upon leaving Special Use Airspace is given a weight of 2.0.

C. Each IFR/SVFR arrival transferred to an approach control is given a weight of 1.50.

D. Each IFR/SVFR arrival (including IFR cancellations) and IFR/SVFR aircraft terminating center ATC services upon entry into Special Use Airspace is given a weight of 2.0.

E. Each transitional IFR/SVFR overflight (aircraft that exit center airspace at an altitude 4000 feet or more different from the aircraft altitude entering the

center area) is given a weight of 1.50.

F. Each overflight (non-transitional) is given a weight of 1.00.

G. Each VFR advisory is given a weight of 0.50.

H. For each hour of operation the hourly counts for (A) through (G) are added together to obtain the average weighted hourly count.

I. For each day, and the prior 364 days (i.e., use a 365 day count), calculate the percent that military air traffic comprises of total air traffic. Divide that percent figure by four, and then multiply by the average weighted hourly count derived in (H). This will yield the military add-on count. (Example: The military traffic count equals 20% of the total traffic count; the average weighted hourly count (H) = 500). The formula is:

(.2 / 4 = .05 x 500 = 25)

J. For each day, and the prior 364 days (i.e., use a 365 day count) calculate:

1. The percent of total traffic that is:

   a. Jet aircraft

   b. Piston powered and turbo-prop aircraft combined

2. Take the lower percentage of the two figures derived in (1) above and divide it by four, then multiply by the average weighted hourly count derived in (H). This will yield the traffic mix add-on count.

   Example:

   1. Jet aircraft = 58%

   2. Piston powered and turbo-prop aircraft combined = 32%

   3. Average weighted hourly count (H) = 500

   4. .32 / 4 = .08 x 500 = 40

K. For each day, and the prior 364 days (i.e., use a 365 day count), calculate the percent that domestic over water traffic comprises of total domestic traffic and divide by 5. Multiply that modified percentage figure by the average weighted hourly count derived in (H). This will yield the domestic over water add-on count. (Example: The domestic over water traffic count equals 20% of the total domestic traffic count; the average weighted hourly count (H) = 500). The formula is: *(note: the domestic over water count is included in the total domestic traffic count)*

(.20/5 = .04 x 500 = 20)

L. For each month, and the prior 11 months (i.e. use a 12 month calculation), calculate the percent that oceanic air traffic comprises of total domestic air traffic and multiply that percentage by 3. Multiply that modified percent figure by the average weighted hourly count derived in (H). This will yield the oceanic add-on count. (Example: The ocean traffic count equals 10% of the total domestic traffic count; the average weighted hourly count (H) = 500). The formula is:

(.10 x 3 = .30 x 500 = 150)

M. For each day and the prior 364 days (i.e., use a 365 day count):

1. Divide the facility's airspace by 10,000 square miles.

2. Calculate the density add-on (average weighted hourly count (H) /density (1. above) x 1.5).

Example:

1. 103,440/10,000 = 10.344

2. 500/10.344 = 48.337

3. 48.337 x 1.5 = 72.5 or (73)

N. For each day and the prior 364 days (i.e., use a 365 day count):

1. Calculate the total flight time in minutes for all aircraft in the center's airspace for the average hour of the 1830 busiest hours;

2. Determine the average hourly sector operations (i.e., the total of all flights penetrating all sectors in the center for the average hour of the 1830 busiest hours);

3. Divide the total flight time in minutes (1. above) by the average hourly sector operations (2. above) x 3 to obtain the airspace usage add-on.

Example:

1. 10615

2. 1069

3. 10615 / 1069 x 3 = 29.8 (or 30)

O. Each facility:

1. An en route facility is credited with having mountainous terrain if it has land

depicted as “mountainous terrain” as specified in FAR 95 Subpart B and, has terrain above 10,000 feet MSL within the facility’s designated airspace = 5%;

2. a) If it interacts with one (1) foreign country = 1%;

   b) If it interacts with two (2) foreign countries = 2%

   c) If it interacts with three (3) or more foreign countries = 4.5%

Add all applicable percentages in (O) 1 and 2 and then multiply that total percentage by the average weighted hourly count derived in (H). This will yield the facility profile add-on count.

Example:

1. Terrain = 5%
2. Foreign country (1) = 1%
3. Total = 6%
4. Average weighted hourly count (H) = 500
5. .06 x 500 = 30

P. Add the military add-on count derived in (I) above, the mix of traffic add-on count derived in (J) above, the domestic over water add-on count derived in (K) above, the oceanic add-on count derived in (L) above, the density add-on count derived in (M) above, the airspace usage add-on in derived (N) above, and the facility profile add-on count derived in (O) above to the average weighted hourly count derived in (H) to yield the modified average weighted hourly count.

Example:

1. Average weighted hourly count (H) = 500
2. Military add-on count (I) = 25
3. Mix of traffic add-on count (J) = 40
4. Domestic over water add-on count (K) = 20
5. Oceanic traffic add-on count (L) = 150
6. Density add-on count (M) = 73
7. Airspace usage add-on count (N) = 30
8. Facility profile add-on count (O) = 30

Modified average weighted hourly count (P) =

500 + 25 + 40 + 20 + 150 + 73 + 30 = 868

Q. Calculate the traffic count index as described earlier under the section titled "Sustained Traffic Index."

The level of difficulty and complexity of the ARTCC is determined by the traffic count index described earlier.

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PART III - COMBINED CONTROL FACILITY (CCF) POSITIONS

INFLUENCE OF ENVIRONMENTAL AND OPERATIONAL COMPLEXITY FACTORS

The influence of complexity factors for CCF radar approach control positions is the same as described for terminal facilities on pages *26 through 30* of this standard, and for CCF center control positions, as described for center controller positions on pages *40 through 44*, as practical in consideration of counting methodologies and, where applicable, for CCF tower positions, the same as described for towers on pages *14 through 18*.

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The specific methods used to measure level of air traffic congestion at the various terminals are described in detail in the section titled "Sustained Traffic Index."

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COMPLEXITY FORMULA**SUSTAINED TRAFFIC INDEX**

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Most CCFs experience their busiest air traffic during the day and evening hours with operations declining sharply during the very late evening and early morning hours. Operations at individual CCFs may vary slightly from day to day and during different seasons of the year.

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The formula below ensures that any daily and seasonal variances in air traffic are put in proper perspective in developing the sustained traffic index. It measures the busiest air traffic periods while recognizing the influence of sustained levels of air traffic on the facility.

The segment of the work year measured is the busiest 1,830 hours and the next busiest 1,830 hours in terms of total aircraft handled in a consecutive 365 day period. The use of 1,830 hours is based on the realization that at most facilities the greatest concentrations of air traffic congestion occur during 10 hours, rather than the 24 hours a facility is open each day. Half the days in a year (183) are multiplied by the 10 hours to derive 1,830 hours.

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In those facilities where there is very little decline in air traffic levels between the busiest 1,830 hours and the second busiest 1,830 hours, the count is adjusted to reflect the sustained level of air traffic. In those facilities where there is a substantial difference between the peak and the next level of air traffic (i.e. the second busiest 1,830 hours) the count is adjusted to reflect that the high level of air traffic is not sustained.

The formula for measuring the facility's sustained traffic index (D_t) is:

$$D_t = 1 + (C_{av2} / C_{av1})$$

The formula for deriving the facility's Traffic Count Index is:

$$D_t \times W_{av1} = \text{Traffic Count Index}$$

where:

C_{av1} is the average unweighted hourly count for the busiest 1,830 hours

C_{av2} is the average unweighted hourly count for the second busiest 1,830 hours

W_{av1} is the modified average weighted hourly count for the busiest 1,830 hours.

FLIGHT OPERATIONS COUNTED

All the types of flight operations that pertain to CCFs are used to compute the average weighted hourly count. This includes all IFR arrivals and departures within the CCF's airspace, overflights, transitional overflights, oceanic and other over water traffic, practice instrument approaches and VFR advisories. *Note: Aircraft counts are determined through manual means, automation capabilities in computer system and additional automated calculation tools and are the best practical method of determining those counts considering operational workload impacts.*

WEIGHTING AND MODIFYING THE TRAFFIC COUNT TO REFLECT COMPLEXITY

The air traffic count is weighted to recognize the relative difficulty of handling the different types of tower, approach control and center flight operations.

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I. TOWER OPERATIONS

Apply the same weights and calculations as shown for Tower Without Radar, Part I.

II. NON RADAR-APPROACH CONTROL OPERATIONS

Apply the same weights and calculations as shown for Non-Radar Approach Control Terminal, Part I.

III. TERMINAL RADAR APPROACH CONTROL OPERATIONS

Apply the same weights and calculations as shown for Terminal Radar Approach Control, Part I.

IV. CENTER OPERATIONS

For each average hour of operation (i.e., the 1830 busiest hours divided by 1830):

A. Each IFR/SVFR departure transferred from approach control is given a weight of 1.50.

B. Each IFR/SVFR departure (including IFR airfiles) and IFR/SVFR aircraft receiving ATC services upon leaving Special Use Airspace is given a weight of 2.0.

C. IFR/SVFR arrival transferred to an approach control is given a weight of 1.50.

D. Each IFR/SVFR arrival (including IFR cancellations) and IFR/SVFR aircraft terminating center ATC services upon entry into Special Use Airspace is given a weight of 2.0.

E. Each overflight (non-transitional) is given a weight of 1.00.

F. Each VFR advisory is given a weight of 0.50

G. For each hour of operation the hourly counts for (A) through (F) are added together to obtain the average weighted hourly count.

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H. For each day, and the prior 364 days (i.e., use a 365 day count), calculate the percent that military air traffic comprises of total air traffic. Divide that percent figure by four, and then multiply by the average weighted hourly count derived in (G). This will yield the military add-on count.

(Example: The military traffic count equals 20% of the total traffic count; the average weighted hourly count (G) = 500). The formula is:

(.2 / 4 = .05 x 500 = 25)

Note: Until appropriate automation capabilities are established, the military mix calculations will be based on the most recent yearly APO/OPSNET data available

I. For each day and the prior 364 days (i.e., use a 365 day count) calculate:

1. The percent of total traffic that is:

(a) air carrier and military traffic combined

(b) general aviation traffic

(c) air taxi traffic

Note: Until appropriate automation capabilities are established, the aircraft mix calculations will be based on the most recent yearly APO/OPSNET data available.

2. Determine which of the two, air carrier and military traffic combined or general aviation traffic, constitutes a lower percentage of the total traffic.

3. Add the air taxi traffic to the lower of the two – i.e. air carrier and military traffic combined or general aviation traffic.

4. After adding the air taxi traffic to either the air carrier and military traffic combined or general aviation traffic, calculate the percent traffic mix of the two categories of traffic (i.e., the one including air taxi and the one excluding air taxi).

5. Take the lower percentage of the two figures derived in (4) above and divide it by four, then multiply by the average weighted hourly count derived in (G). This will yield the traffic mix add-on count.

Example:

1. air carrier and military traffic combined = 58%

2. general aviation traffic = 32%

3. air taxi traffic = 10%

4. a. general aviation (32%) + air taxi (10%) = 42%

   b. air carrier + military = 58%

5. The lower of the two percentages (4a or 4b) = 42%

6. Average weighted hourly count (G) = 100

7. .42 / 4 = .105 x 100 = 10.5

J. For each day, and the prior 364 days (i.e., use a 365 day count), calculate the percent that domestic over water traffic comprises of total domestic traffic and divide by 5. Multiply that modified percentage figure by the average weighted hourly count derived in (G). This will yield the domestic over water add-on count. (Example: The domestic over water traffic count equals 20% of the total domestic traffic count; the average weighted hourly count (G) = 500). The formula is: *(note: the domestic over water count is included in the total domestic traffic count)*

(.20/5 = .04 x 500 = 20)

K. For each month and the prior 11 months (i.e., use a 12 month calculation**),** calculate the percent that oceanic air traffic comprises of total domestic air traffic and multiply that percentage by 3. Multiply that modified percent figure by the average weighted hourly count derived in (G). This will yield the oceanic add-on count. (Example: The ocean traffic count equals 10% of the total domestic traffic

count; the average weighted hourly count (G) = 500). The formula is:

(.10 x 3 = .30 x 500 = 150)

L. Each Facility:

1. An en route facility is credited with having mountainous terrain if it has land depicted as "mountainous terrain" as specified in FAR 95 Subpart B and, has terrain above 10,000 feet MSL within the facility's designated airspace = 5%;

2. a) If it interacts with one (1) foreign country = 1%;

   b) If it interacts with two (2) foreign countries = 2%

   c) If it interacts with three (3) or more foreign countries = 4.5%

   Add all applicable percentages in (M) 1 and 2 and then multiply that total percentage by the average weighted hourly count derived in (G). This will yield the facility profile add-on count.

Example:

1. Terrain = 5%
2. Foreign country (1) = 1%
3. Total = 6%
4. Average weighted hourly count (H) = 500
5. .06 x 500 = 30

M. Add the military add-on count derived in (H) above, the mix of traffic add-on count derived in (I) above, the domestic over water add-on count derived in (J) above, and the oceanic add-on count derived in (K) above and the facility profile add-on count derived in (L) above to the average weighted hourly count derived in (G) to yield the modified average weighted hourly count.

Example:

1. Average weighted hourly count (G) = 500;
2. Military add-on count (H) = 25;
3. Mix of traffic add-on count (I) = 10.5;
4. Domestic over water add-on count (J) = 20;
5. Oceanic traffic add-on count (K) = 150;

6. Facility profile add-on count (L) = 30

Modified average weighted hourly count (M) =

500 + 25 + 10.5 + 20 + 150 + 30 = 735.5

N. Calculate the traffic count index as described earlier under the section titled "Sustained Traffic Index."

V. COMBINING OPERATIONS

Add the traffic count index of all the operational functions within the CCF to obtain a combined traffic count index.

The level of difficulty and complexity of the CCFs is incorporated within the traffic count index.

ADMINISTRATION OF THE STANDARD

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1. MINIMIZING UNWARRANTED FACILITY PAY LEVEL FLUCTUATIONS

Every effort should be made to avoid frequent fluctuations in facility pay levels which may be caused by temporary increases or decreases in traffic activity. For example, runway closures, new construction at an airport, or labor disputes in the aviation industry may well decrease a facility's average traffic count index, and facility pay level changes may appear warranted. Similarly, an extremely large number of flight operations handled during a brief air show or some other special event may significantly increase the average traffic count index. However, because these events are temporary, a pay level change shall not be effected.

While it is the intent of this standard to minimize unwarranted facility pay level fluctuations caused by temporary shifts in air traffic activity, no precise formula can be given for dealing with the many situations where these sudden shifts in air traffic may impact the average traffic count index. The adjustment of a facility's flight operations count to compensate for these and similar kinds of situations should be a matter of judgment based on experience as to what constitutes both a reasonable and normal air traffic workload for the particular facility.

The average traffic count index will change for a variety of reasons. However, unwarranted facility pay level fluctuations may be avoided by delaying action to change facility pay levels until the probable permanency of the change in the average traffic count index can be established. The following procedures are to be observed to insure that facility pay level changes are made only when appropriate.

2. RAISING FACILITY PAY LEVELS

When a facility's average traffic count index warrants a pay level upgrade, a projection shall be made of that facility's anticipated air traffic activity for a twelve month period. If this projection, based on past experience plus anticipated changes in air traffic activity, shows that the facility activity will remain at or above that higher traffic count index, action to change the facility pay level should be accomplished promptly. If on the other hand the air traffic projection indicates

that the facility's activity is unlikely to remain at or above the higher traffic count index, the facility pay level change shall not be made.

3. LOWERING FACILITY PAY LEVELS

Where decreases in the traffic count index indicate that lowered facility pay levels might be warranted, a buffer zone concept will be utilized to prevent precipitous facility pay level adjustments, i.e. average counts which fluctuate no more than five percent below the minimum facility complexity-formula-based pay level (breakpoint) for a particular facility pay level shall be considered borderline and retained at the current level. Facility pay levels shall be retained where projections indicate that the facility would at least maintain a level of air traffic activity which would place it within the buffer zone. However, where air traffic projections clearly indicate that the traffic count index will remain below the buffer zone, action to change positions to a lower pay level is appropriate. If a facility falls below the buffer for its current pay level for six consecutive months, the same type of air traffic activity projection for the next twelve months as described above shall be utilized to establish the probable permanency of the change.

APPEAL PROCESS

WHAT MAY BE APPEALED:

The way in which the complexity formula for pay setting is interpreted or applied at a specific facility may be appealed. NOTE: THE CONTENT OF THE COMPLEXITY FORMULA ITSELF MAY NOT BE APPEALED - ONLY ITS INTERPRETATION OR APPLICATION.

WHO MAY APPEAL:

An appeal may be initiated through appropriate facility channels by any employee. However, the appeal may be filed *only* by the Facility Manager and the NATCA Facility Representative. All appeals *should* be agreed to by both parties before being submitted. In the event that either party non-concurs in the appeal, the party non-concurring has *15 days* to prepare a written rationale for non-concurrence. The non-concurrence *must* be submitted along with the appeal.

HOW TO FILE AN APPEAL:

1. The appeal must be in writing and must include the following:

    a) The facility's name and pay level;
    b) The names, mailing addresses and telephone numbers of the facility manager and the NATCA facility representative;
    c) A description of the basis for the appeal, including specific references to those portions of the standard believed to be misinterpreted or inappropriately applied;
    d) Copies of any supporting documentation and any other relevant materials in support of the appeal;
    e) A description of how the problem identified should be corrected, including the remedy being sought.

2. The appeal must be filed via certified mail with the FAA ATO COO, with a copy to the NATCA Executive Vice President (EVP).

THE APPEALS PROCESS:

1. Upon receipt of the appeal, the FAA ATO COO and the EVP will establish within *15 days* a Complexity Appeal Review Committee (CARC), consisting of a NATCA representative and an Air Traffic Management Representative.

2. The CARC will:

    a) determine if the issue is appealable
    b) conduct appropriate fact-finding and analysis
    c) issue a written statement of findings within *60 days* of receipt of the appeal

explaining its decision or the reasons why it failed to reach a decision.

Decisions of the CARC must be reached mutually. They are binding and final, and there is no further appeal. If the CARC fails to reach a mutual decision, the facility manager and/or facility representative may request to have its case heard by a Complexity Appeals Board (CAB). This request must be in writing to the FAA ATO COO and the EVP, and must be filed within *30 days* of the notification by the CARC that it cannot reach a mutual decision.

1. The CAB:
   a) Consists of an FAA representative, a NATCA representative and an arbitrator. The arbitrator may be mutually agreed to by the FAA representative and the NATCA representative, or may be selected from a panel submitted by the Federal Mediation and Conciliation Service. If the FMCS panel is used, the NATCA representative and the FAA representative will alternately strike names from the panel until only one remains.
   b) Has *30 days* from the receipt of the appeal to select the arbitrator.
   c) Will convene within *90 days* from the date of the appointment of the arbitrator at a hearing site mutually agreeable to both parties, and decision of the majority will be rendered within *30 days* of the conclusion of the hearing.

IMPACT OF DECISIONS:

If the appeal is sustained by either the CARC or the CAB, and the finding supports raising of the facility pay level, the decision will be implemented within two pay periods of the finding.

GLOSSARY

Air Route Traffic Control Center (ARTCC) - An air traffic control facility that provides air traffic control service to aircraft operating on IFR flight plans within controlled airspace and principally during the en route phase of flight. When equipment capabilities and controller workload permit, certain advisory/assistance services may be provided to VFR aircraft.

Air Traffic Control System Command Center – The Air Traffic Control System Command Center is responsible for the strategic aspects of the NAS. The Command Center modifies traffic flow and rates when congestion, weather, equipment outages, runway closures, or other operational conditions affect the NAS.

Air Traffic Operations - all aircraft operations, excluding ground movement of aircraft, vehicles and personnel.

Buffer zone - A numerical figure of five percent (5%) below the minimum facility complexity-formula-based pay level (breakpoint) for a particular facility's pay level. This figure will be used in conjunction with air traffic projections to determine if change to a lower pay level is appropriate.

Certified Professional Controller (CPC) - Controller is facility or area certified, and actively engaged in the separation and control of air traffic.

Center Airspace Mileage – For the purpose of this standard, the facility mileage calculation is determined by the National Oceanic Survey (NOS) based on an average of the low altitude airspace square mileage and high altitude airspace square mileage.

Center Area - The square mileage of the area defined by the geographic domestic boundaries of the Center. Note: the calculation of this value is accomplished through coordination with Aeronautical Information Division, ATA-100 and National Oceanic Survey.

Class of Airspace – (Terminal use only) Airspace of defined dimensions within which air traffic control service is provided to aircraft operations in accordance with the airspace classification. Class B, Class C and TRSA are used in the complexity formula.

Class B Airspace - Generally, that airspace from the surface to 10,000 feet MSL surrounding busy airports in terms of airport operations or passenger enplanements.

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Class C Airspace- Generally, that airspace from the surface to 4,000 feet above the airport elevation (charted in MSL) surrounding those airports that have an operational control tower, are serviced by a radar approach control, and have a certain number of IFR operations or passenger enplanements.

Class D Airspace- Generally, that airspace from the surface to 2,500 feet above the airport elevation (charted in MSL) surrounding those airports that have an operational control tower.

Combination Non-Radar Approach Control and Tower Without Radar- An air traffic

control terminal that provides air traffic control services for the airport at which the tower is located and without the use of radar, approach and departure control services to aircraft operating under Instrument Flight Rules (IFR) to and from one or more adjacent airports.

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Combination Radar Approach Control and Tower With Radar - An air traffic control terminal that provides radar control services to aircraft arriving or departing the primary airport and adjacent airports, and to aircraft transiting the terminal's airspace. This terminal is divided into two functional areas: radar approach control positions and tower positions. These two areas are located within the same facility, or in close proximity to one another, and controllers rotate between both areas.

Combined Control Facility (CCF) - An air traffic control facility that provides approach control services for one or more airports as well as en route air traffic control (center control) for a large area of airspace. Some may provide tower services along with approach control and en route services.

Combined TRACON Facility - An air traffic control terminal that provides radar approach control services for two or more large hub airports, as well as other satellite airports, where no single airport accounts for more than 60% of the total Combined TRACON facility's air traffic count. This terminal requires such a large number of radar control positions that it precludes the rotation of controllers through all positions.

Converging runway - Runway configuration that has two or more runways where the magnetic alignment will have crossing flight paths within the airport traffic area (ATA) and where the actual runway surfaces do not overlap.

Crossing runway - Runway configuration that has two or more runways where the magnetic alignment will have crossing flight paths and where the actual runway surfaces do overlap.

Domestic-Over-Water Traffic - To be counted as Domestic-Over-Water traffic the facility must: (1) separate aircraft using ICAO rules (whether using radar or non-radar procedures), and (2) the aircraft must (or must have) crossed the ADIZ (whether in domestic-over-water sector or ocean sector).

ETAP – Enroute Track Analysis Program. Primary function is to collect and collate National Airspace System (NAS) tracking data from the Host Aircraft Management Execs (HAME) tracking file for all HOST equipped en route centers. This program is used by headquarters personnel to sort HAME data into aircraft operations, by hour, into categories used under the complexity formula for pay setting to establish a facility traffic count index. Field facilities use this program for HAME data audit analysis and validation.

Foreign Country - In order to receive credit for interacting with a foreign country, facilities with adjacent airspace must routinely coordinate and transfer air traffic with an air traffic facility from another sovereign nation.

Large hub Airport - For the purpose of this standard, a terminal air traffic control facility with an annual air traffic count of 300,000 or more.

LAWRS – A limited aviation weather reporting station is a facility where observations are taken, prepared and transmitted by certified FAA air traffic control specialists on a limited basis. At these facilities, various degrees of automated sensors and/or other automated equipment may be available. However, when on duty, the LAWRS observer has the complete responsibility for the surface aviation weather elements.

Instrument flight rules (IFR) - Rules that govern the procedures for conducting instrument flight.

Mix of traffic - Currently the Standard considers the mix of air traffic for terminals and CCFs to be comprised of three categories of traffic: (1) air carrier and military combined, (2) general aviation (including non-military helicopters), and (3) air taxi. When the Agency's automated data collection capability at these facilities is able to identify jet, turbo prop, and piston traffic separately, it is contemplated that their traffic mix factor will be revised to be consistent with the center measure of traffic mix.

MOA - Military Operations Area

Non-Radar Sector (in TRACON) - An exclusive non-radar sector (i.e., area) in what is otherwise classified as a TRACON or TRACON portion of an up-down facility. When controllers are assigned to this sector they are responsible for the control and separation of air traffic without physical or mechanical visual reference to the aircraft under the controllers' jurisdiction. Without radar, the controllers use flight progress strips to document aircraft movement and to develop a picture in their minds of all the aircraft using the airspace. Separation standards between the aircraft are specified in terms of time and/or mileage and they vary according to the speed of the aircraft and the navigational equipment available to the pilot.

Oceanic Traffic - Only air traffic traversing airspace over the oceans of the world and the Gulf of Mexico, are to be counted if both of the following conditions are met: (1) no direct communications between aircraft and controller, and (2) ICAO non-radar procedures are used exclusively to separate aircraft.

Overflight - Aircraft that transit a facility's airspace that neither originate nor terminate within that facility's airspace.

Parallel runways - Two or more runways at the same airport whose centerlines are parallel.

Point Out - A physical or automated action taken by a controller to transfer the radar identification of an aircraft to another controller if the aircraft will enter the airspace of another controller and radio communications will not be transferred.

Primary Airport - The airport with the most volume in the TRACON's airspace.

Proximity Airports - To be counted as a proximity airport, an airport must have at least 300,000 operations per year, and must have one or more additional airports within 10 miles (center of airport to center of airport) that also have 300,000 operations or more.

Secondary airport - An airport not considered the primary airport for an air traffic control

facility for which air traffic services are provided by that ATC facility.

Single runway - One runway (either hard surface, grass or sea lane) at airports for aircraft use or parallel runways that are separated by 2500 feet or less.

Special Use Airspace (SUA) – Airspace where activities must be confined or limitations may be imposed on aircraft operations. For the purpose of this standard, the SUA airspace types included are: Alert Area, Controlled Firing Area, Military Operations Area, Prohibited Area, Restricted Area and Warning Area.

Special Visual Flight Rules (SVFR) services /operations- Aircraft operating in accordance with clearances within Class B, C, D, and E surface areas in weather conditions less than the basic VFR weather **minimums.** Such operations must be requested by the pilot and approved by the controller.

Traffic Count Index - A combined measure of the complexity of the air traffic and the sustained traffic index at each facility. It is the measure used to set facility pay levels.

Terminal Radar Approach Control (TRACON) - An air traffic control terminal that provides radar control to aircraft arriving or departing the primary airport and adjacent airports, and to aircraft transiting the terminal's airspace.

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Terrain - A terminal facility is credited with having mountainous terrain if land measures 4000 feet above the primary airport field elevation and is contained in the terminal facility's airspace. An en route facility is credited with having mountainous terrain if it has land depicted as "mountainous terrain" as specified in FAR 95 Subpart B and, has terrain above 10,000 feet MSL within the facility's designated airspace.

Touch-and-go - An operation by an aircraft that lands and departs on a runway without stopping or exiting the runway.

Tower With Radar - An airport traffic control terminal that provides traffic advisories, spacing, sequencing, and separation services to VFR and IFR aircraft operating within the vicinity of the airport using a combination of radar and direct observations.

Tower Without Radar - An airport traffic control terminal that provides service using direct observation primarily to aircraft operating under visual flight rules (VFR). These terminals are located at airports where the principal user category is low performance aircraft.

TTAP – Terminal Track Analysis Program. Primary function is to collect and collate traffic counts from terminal air traffic facilities. Aircraft operations are entered via manual or automated means, by hour, into categories used under the complexity formula for pay setting to establish a facility's pay level.

Transitional Overflight (Center function) - An aircraft that exits center airspace at an altitude 4000 feet or more different from the aircraft's altitude entering the center area.

TRSA - Airspace surrounding designated airports wherein ATC provides radar vectoring,

sequencing, and separation on a full-time basis for all IFR and participating VFR aircraft.

VFR Advisory - Service provided to aircraft not on an IFR flight plan. This includes air traffic and weather information, navigational assistance, and other ATC services provided as the work situation permits.

Visual flight rules (VFR) - Rules that govern the procedures for conducting flight under visual conditions.

APPENDIX 1

Complexity-Based Facility Pay Levels

TCI RANGE			BUFFER	FACILITY PAY LEVEL
		Towers Without Radar		
315	-		299	FPL - 9
250	-	314.9	238	FPL - 8
185	-	249.9	176	FPL - 7
120	-	184.9	114	FPL - 6
85	-	119.9	81	FPL - 5
50	-	84.9	48	FPL -4
0		49.9		FPL-3
		TRACONs		
750	-		713	FPL - 12
500	-	749.9	475	FPL - 11
350	-	499.9	333	FPL - 10
225	-	349.9	214	FPL - 9
140	-	224.9	133	FPL - 8
95	-	139.9	90	FPL - 7
50	-	94.9	48	FPL - 6
0	-	49.9		FPL - 5
		Combined Tower and TRACON		
950	-		903	FPL - 12
700	-	949.9	665	FPL - 11
500	-	699.9	475	FPL - 10
325	-	499.9	309	FPL - 9
215	-	324.9	204	FPL - 8
140	-	214.9	133	FPL - 7
95	-	139.9	90	FPL - 6
0	-	94.9		FPL - 5

Non-Radar Approach & Tower

180	-		171	FPL - 8
120	-	179.9	114	FPL - 7
70	-	119.9	67	FPL - 6
0	-	69.9	0	FPL - 5

Combined Control Facilities

900	-		855	FPL - 11
750	-	899.9	713	FPL - 10
400	-	749.9	380	FPL - 9
150	-	399.9	143	FPL - 8
100	-	149.9	95	FPL - 7
0	-	99.9		FPL - 6

Towers With Radar

500	-		475	FPL - 12
400	-	499.9	380	FPL - 11
315	-	399.9	299	FPL - 10
250	-	314.9	238	FPL - 9
185	-	249.9	176	FPL - 8
120	-	184.9	114	FPL - 7
85	-	119.9	81	FPL - 6
50	-	84.9	48	FPL - 5
0	-	49.9		FPL-4

Air Route Traffic Control Centers

1550	-		1473	FPL - 12
1250	-	1549.9	1188	FPL - 11
600	-	1249.9	570	FPL - 10
0	-	599.9		FPL - 9

Combined Tracons

1500	-		1425	FPL - 12
1000	-	1499.9	950	FPL - 11
500	-	999.9	475	FPL - 10

0 - 499.9 FPL - 9

End