

A.C. Bowden m

COMPLETE CLASSIFICATION

Recording technical quality

Four grades of technical quality are used:-

1. Good.
 2. Acceptable, with no technical defect likely to impair classification of the radiograph for pneumoconiosis.
 3. Poor, with some technical defect but still acceptable for classification purposes.
 4. Unacceptable.
- If technical quality is not Grade 1, a comment should be made about the technical defects (Note 5).

Parenchymal abnormalities

Small Opacities

Profusion

The category of profusion is based on assessment of the concentration of opacities (Note 6) by comparison with the standard radiographs. For profusion the written definitions are a guide, but the standard radiographs take precedence (Note 7).

- Category 0 - small opacities absent or less profuse than the lower limit of category 1.

- Categories 1, 2 - represent increasing profusion of small opacities as defined by the corresponding standard radiographs.

By using the 12-point scale of profusion, the Classification recognises the existence of a continuity of change from no small opacities to the most advanced category. While still retaining the four major categories, 0, 1, 2 and 3, as defined by the standard radiographs, this scale

readily permits subdivision into more categories and provides extra information. The instructions for using this 12-point scale are:- The radiograph is classified in the usual way into one of the four major categories by comparison with the standard radiographs. If during the process the major category above or below is seriously considered as an alternative, this is recorded. Thus, category 2/1 is profusion of major category 2, but with category 1 having been seriously considered as an alternative. Profusion which is without serious doubt category 2, that is, near the middle of the major category, should be classified 2/2.

In radiographs within category 0, a subdivision is also possible. Thus category 0/1 is profusion of category 0, but category 1 was seriously considered. Category 0/0 is a radiograph in which there are no small opacities, or if a few are thought to be present they are not sufficiently definite or numerous for category 1 to be considered. If the absence of small opacities is particularly obvious, the profusion should be recorded as 0/-. Within category 3 a radiograph showing markedly higher profusion than would be classified as 3/3 should be recorded as 3/+. Thus, the short four-point scale becomes the complete twelve-point scale: 0/-, 0/0, 0/1, 1/0, 1/1, 1/2, 2/1, 2/2, 2/3, 3/2, 3/3, 3/+. (Note 8). It must be emphasised that other abnormalities may be present regardless of the category of profusion of small opacities.

Extent

The zones in which the opacities are seen are recorded. The lungs are divided into six zones - upper, middle, and lower, right and left - by horizontal lines drawn at one-third and two-thirds of the vertical distance between the lung apices and the domes of the diaphragm.

The category of profusion of small opacities is determined by considering the profusion as a whole over the affected zones of the lung, and by comparing this with the standard radiographs. Where there is a marked (three minor categories or more) difference in profusion in different zones of the lung, then the zone or zones showing this marked lesser degree of profusion are ignored for the purpose of classifying the profusion (Note 9).

Shape and size

The shape and size (Note 10) of small opacities are recorded. Two kinds of shape are recognised: rounded and irregular. In each case, three sizes are differentiated. They are illustrated by standard radiographs which take precedence over the following written definitions. The letters p, q, r denote the presence of small rounded opacities, where

p = diameter up to about 1.5 mm;

q = diameter exceeding about 1.5 mm and up to about 3 mm;

r = diameter exceeding about 3 mm and up to about 10 mm.

The letters s, t, u denote the presence of small irregular opacities, where

s = width up to about 1.5 mm;

t = width exceeding 1.5 mm and up to about 3 mm;

u = width exceeding 3 mm and up to about 10 mm.

To record shape and size, two letters must be used. Thus if the reader considers that all or virtually all opacities seen are of one shape and size, then this should be noted by recording the symbol twice, separated by an oblique stroke (for example, q/q). If, however, another shape (or size) is seen, then this should be recorded as the second letter (for example, q/t). 'q/t' would mean that the predominant small opacity is round and of size q, but that there are significant numbers of small irregular opacities present of size t. In this way any combination of small opacities may be recorded (Note 11).

Standard radiographs illustrating both rounded and irregular shapes should be used for comparisons when the shape of opacity is in doubt or when both shapes are present.

Large Opacities

The examples of large opacities in the standard radiographs show abnormal opacities greater than 10 mm in diameter. The categories are defined in terms of dimensions of the opacities:

Category A - an opacity having a greatest diameter exceeding about 10 mm and up to and including about 50 mm, or several opacities each greater than about 10 mm the sum of whose greatest diameters does not exceed about 50 mm.

Category B - one or more opacities larger or more numerous than those in category A whose combined area does not exceed the equivalent of the right upper zone.

Category C - one or more opacities whose combined area exceeds the equivalent of the right upper zone.

Pleural abnormalities

Pleural Thickening

Site (chest wall, diaphragm, costophrenic angle), width and extent of pleural thickening are recorded separately and defined in the text below (Note 12).

Chest Wall

Types: Circumscribed (plaques), and/or diffuse (Note 12).

Site: Pleural thickening of the chest wall is recorded separately for the right and left chest walls.

Width: For pleural thickening seen along the lateral chest wall the measurement of the maximum width of the shadow is made from the inner line of the chest wall to the inner margin of the shadow seen most sharply at the parenchymal-pleural boundary. The maximum width usually occurs at the inner margin of the rib shadow at its outermost point.

a = maximum width up to about 5 mm.
b = maximum width over about 5 mm and up to about 10 mm.
c = maximum width over about 10 mm.

For pleural thickening seen face on (en face), the presence is recorded, even if it can also be seen in profile. If pleural thickening is seen face on only, width usually can not be measured.

Extent: Extent is defined in terms of the maximum length of pleural involvement, or as the sum of maximum lengths, whether seen in profile or face on.

- 1 = total length equivalent to up to one quarter of the projection of the lateral chest wall.
- 2 = total length exceeding one quarter but not one half of the projection of the lateral chest wall.
- 3 = total length exceeding one half of the projection of the lateral chest wall.

Diaphragm

A plaque involving the diaphragmatic pleura is recorded separately as present or absent, right or left. This is illustrated by an example in the standard radiographs (Note 13).

Costophrenic angle obliteration

The lower limit for this obliteration is defined by the standard radiograph showing profusion category 1/1 t/t. Such thickening is recorded separately from thickening over other areas (Note 14). If the thickening extends further up the chest wall, the radiograph should be classified as costophrenic angle obliteration and pleural thickening on the chest wall, if the latter is extent 1 or greater. Costophrenic angle obliteration is recorded as absent or present. The site, right or left, is specified.

Pleural Calcification

Site and extent are recorded for the two lungs separately. The following numerical definitions of extent take precedence over the examples in the standard radiographs (Note 15).

Site: Chest wall, diaphragm, and other. The latter includes calcification of the mediastinal and pericardial pleura.

Extent: 1 = an area of calcified pleura with greatest diameter up to about 20 mm, or a number of such areas the sum of whose greatest diameters does not exceed about 20 mm.

Extent: 2 = an area of calcified pleura with greatest diameter exceeding about 20 mm and up to about 100 mm, or a number of such areas the sum of whose greatest diameters exceeds about 20 mm but does not exceed about 100 mm.

3 = an area of calcified pleura with greatest diameter exceeding about 100 mm, or a number of such areas whose sum of greatest diameters exceeds about 100 mm.

Symbols

Symbols to record radiographic features of importance are listed below. Their use is obligatory. Examples are included in the standard radiographs and in the diagrams (Note 16).

It is to be taken that the definition of each of the Symbols is preceded by an appropriate word or phrase, such as "suspect", "changes suggestive of", "opacities suggestive of", etc.

The Symbols are:

ax - coalescence of small pneumoconiotic opacities (Note 16)

bu - bullae(s)

ca - cancer of lung or pleura

cn - calcification in small pneumoconiotic opacities

co - abnormality of cardiac size or shape

cp - cor pulmonale

cv - cavity

di - marked distortion of the intrathoracic organs

ef - effusion

em - definite emphysema

es - eggshell calcification of hilar or mediastinal lymph nodes

fr - fractured rib(s)

hi - enlargement of hilar or mediastinal lymph nodes
 ho - honeycomb lung
 id - ill defined diaphragm (Note 16)
 ih - ill defined heart outline (Note 16)
 kl - septal (Kerley) lines
 od - other significant abnormality
 pl - pleural thickening in the interlobar fissure or mediastinum
 px - pneumothorax
 rp - rheumatoid pneumoconiosis
 tb - tuberculosis

The calcified primary complex of tuberculosis or other granulomatous processes, such as coccidioidomycosis or histoplasmosis should not be coded under tb. Such appearances should be noted under Comments.

Comments

Comments should be recorded pertaining to the classification of the radiograph, particularly if some other cause is thought to be responsible for a shadow which could be thought by others to have been due to pneumoconiosis; also to identify radiographs for which the technical quality may have affected the reading materially.

SHORT CLASSIFICATION

The detailed rules of how the Short Classification is to be used are as in the Complete Classification but with simplification. The details recorded are as follows:

Technical Quality

Technical quality is recorded 1, 2, 3 or 4 as for the Complete Classification (page 4).

Small Opacities

Profusion by comparison with standard radiographs into the four principal categories: 0, 1, 2 and 3 (page 4).

Shape and size by comparison of the predominant opacity pattern with standard radiographs.

If rounded, p, q or r.

If irregular, s, t or u as for Complete Classification (page 6).

Large Opacities

Category A, B or C as for Complete Classification (page 6).

Pleural Changes

Pleural thickening is recorded as symbol pt.

Pleural calcification is recorded as symbol pc.

Symbols

As for Complete Classification, together with pt and pc. All are obligatory (page 9).

Comments

Comments should be recorded as for Complete Classification (page 10).

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READING SHEET		IDENTIFICATION DATA	
* suitable for use with the ILO 1980 INTERNATIONAL CLASSIFICATION OF RADIOGRAPHS OF THE PNEUMOCOLOSIS		FILM	READER
		PROFUSION DATE	
FILM QUALITY	Grade (1, 2, 3, 4) Comment made (T, N)		
SMALL OPACITIES	Profusion (12-point scale) Extent (/ appropriate zones) Shape and size (2 of p,q,r,s,t,u or repeated symbols)		
LARGE OPACITIES	Presence (T, N) Size (A, B, C)		
PLEURAL THICKENING	Face on (T, N) Extent (1, 2, 3) Presence (T, N)		
CHEST WALL - DISCONTINUED (PLAQUES)	Presence (T, N)		
- DIRT/USE			
FACE ON (T, N)	Width (a, b, c)		
EXTENT (1, 2, 3)	Presence (T, N)		
DIAPHRAGM	Site (/ site)		
COSTOPHRENIC ANGLE	Presence (T, N)		
OSTEOPOROSIS	Site (/ site)		
PLEURAL CALCIFICATION	Presence (T, N)		
CHEST WALL	Site (/ site)		
DIAPHRAGM	Site (/ site)		
RYTHM	Site (/ site)		
STROKES	Dead (T, N) Up to 8 from { a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z }		
COMMENTS (write comments)	Made (T, N)		

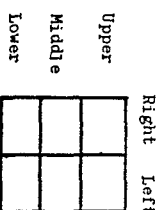
APPENDIX E

DESCRIPTIONS OF STANDARD RADIOGRAPHS* (1980 Revision)

The standard radiographs accompanying the ILO 1980 International Classification of Radiographs of the Pneumocoeloses consist of 22 films.

Two radiographs illustrate the appearance classifiable as category 0/0 for profusion of small opacities.

Eighteen radiographs depict appearances classifiable as categories 1/1 through 3/3 for profusion and B/P through 4/4 for shape and size of small opacities and as categories A through C for size of large opacities. Descriptions of these radiographs are given in the accompanying tables, with notation defined in the Classification and with additional comments as appropriate. The site of small opacities is shown by a tick in the boxes symbolizing the zones of the lungs as follows:



The two remaining radiographs are composite reproductions of sections. One depicts the increasing profusion of irregular small opacities of size "u". The other illustrates various types of pleural abnormality.

Note that the Technical Quality of eight of these radiographs has been judged as meriting grade 2 only. This is because the international trials which preceded the selection of the 1980 set of standards did not yield any better quality examples of the features concerned.

* Prepared by C. Amoudru, H. Rohlig, J.A. Dick, J.C. Gilson, A. Minette and R. Morgan

DESCRIPTIONS OF STANDARD RADIOGRAPHS

1980 STANDARD RADIOGRAPHS SHOWING	TECHNICAL QUALITY	SMALL OPACITIES			LARGE OPACITIES	PLEURAL THICKENING					PLEURAL CALCIFICATION	SYMBOLS	COMMENTS																
		PROFUSION	SHAPE-SIZE	EXTENT		CHEST WALL		DIAPHRAGM	COSTOPHRENIC ANGLE DELIMITATION																				
						CIRCUM- SCRIBED (PLAQUES)	DIFFUSE																						
Q/O (example 1)	1	Q/O	-	-	No	No	No	No	No	No	None	Vascular pattern is well illustrated.																	
Q/O (example 2)	1	Q/O	-	-	No	No	No	No	No	No	None	Also shows vascular pattern, but not as clearly as example 1.																	
1/1: p/p	1	1/1	p/p	<table><tr><td>R</td><td>L</td></tr><tr><td>✓</td><td>✓</td></tr><tr><td>✓</td><td>✓</td></tr><tr><td>✓</td><td>✓</td></tr></table>	R	L	✓	✓	✓	✓	✓	✓	A	No	No	No	No	No	No	ry.	Rheumatoid pneumoconiosis in left lower zone. Small opacities are present in all zones, but the profusion in the right-upper zone is typical of (some would say a little more profuse than) that classifiable as category 1/1.								
R	L																												
✓	✓																												
✓	✓																												
✓	✓																												
2/2: p/p	2	2/2	p/p	<table><tr><td>R</td><td>L</td></tr><tr><td>✓</td><td>✓</td></tr><tr><td>✓</td><td>✓</td></tr><tr><td>✓</td><td>✓</td></tr></table>	R	L	✓	✓	✓	✓	✓	✓	No	No	No	No	No	No	No	pi: th.	Quality defect: radiograph is too light.								
R	L																												
✓	✓																												
✓	✓																												
✓	✓																												
3/3: p/p	1	3/3	p/p	<table><tr><td>R</td><td>L</td></tr><tr><td>✓</td><td>✓</td></tr><tr><td>✓</td><td>✓</td></tr><tr><td>✓</td><td>✓</td></tr></table>	R	L	✓	✓	✓	✓	✓	✓	No	No	No	No	Yes	<table><tr><td>R</td><td>L</td></tr><tr><td>✓</td><td>✓</td></tr></table>	R	L	✓	✓	No	ax.	None				
R	L																												
✓	✓																												
✓	✓																												
✓	✓																												
R	L																												
✓	✓																												
1/1: q/q	1	1/1	q/q	<table><tr><td>R</td><td>L</td></tr><tr><td>✓</td><td>✓</td></tr><tr><td>✓</td><td>✓</td></tr><tr><td>✓</td><td>✓</td></tr></table>	R	L	✓	✓	✓	✓	✓	✓	No	No	No	No	No	No	No	None	Illustrates profusion 1/1 better than shape or size.								
R	L																												
✓	✓																												
✓	✓																												
✓	✓																												
2/2: q/q	1	2/2	q/q	<table><tr><td>R</td><td>L</td></tr><tr><td>✓</td><td>✓</td></tr><tr><td>✓</td><td>✓</td></tr><tr><td>✓</td><td>✓</td></tr></table>	R	L	✓	✓	✓	✓	✓	✓	No	No	Yes	<table><tr><td>R</td><td>L</td></tr><tr><td>✓</td><td>✓</td></tr></table>	R	L	✓	✓	Width: Extent:	<table><tr><td>R</td><td>L</td></tr><tr><td>✓</td><td>✓</td></tr></table>	R	L	✓	✓	No	None	None
R	L																												
✓	✓																												
✓	✓																												
✓	✓																												
R	L																												
✓	✓																												
R	L																												
✓	✓																												

DESCRIPTIONS OF STANDARD RADIOGRAPHS (continued)

1980 STANDARD RADIOGRAPHS SHOWING	TECHNICAL QUALITY	SMALL OPACITIES				LARGE OPACITIES	PLEURAL THICKENING					PLEURAL CALCIFICATION	SYMBOLS	COMMENTS												
		PROFUSION	SHAPE-SIZE	EXTENT			CHEST WALL		DIAPHRAGM	COSTOPHRENIC ANGLE DELIMITATION																
							CIRCUM- SCRIBED (PLAQUES)	DIFFUSE																		
3/3: q/q	2	3/3	q/q	<table><tr><td>R</td><td>L</td></tr><tr><td>✓</td><td>✓</td></tr><tr><td>✓</td><td>✓</td></tr><tr><td>✓</td><td>✓</td></tr></table>	R	L	✓	✓	✓	✓	✓	✓	No	No	No	No	No	No	No	pi.	Quality defects: poor definition of pleura and cut basal angles.					
R	L																									
✓	✓																									
✓	✓																									
✓	✓																									
1/1: r/r	2	1/1	r/r	<table><tr><td>R</td><td>L</td></tr><tr><td>✓</td><td>✓</td></tr><tr><td>✓</td><td>✓</td></tr><tr><td>✓</td><td>✓</td></tr></table>	R	L	✓	✓	✓	✓	✓	✓	No	No	No	No	Yes	<table><tr><td>R</td><td>L</td></tr><tr><td>✓</td><td>✓</td></tr></table>	R	L	✓	✓	No	None	None	Quality defect: subject movement. Profusion of small opacities is more marked in right lung.
R	L																									
✓	✓																									
✓	✓																									
✓	✓																									
R	L																									
✓	✓																									
2/2: r/r	2	2/2	r/r	<table><tr><td>R</td><td>L</td></tr><tr><td>✓</td><td>✓</td></tr><tr><td>✓</td><td>✓</td></tr><tr><td>✓</td><td>✓</td></tr></table>	R	L	✓	✓	✓	✓	✓	✓	No	No	No	No	No	No	No	None	None	Quality defects: radiograph too light and contrast too high. The heart shadow is slightly displaced to the left.				
R	L																									
✓	✓																									
✓	✓																									
✓	✓																									
3/3: r/r	1	3/3	r/r	<table><tr><td>R</td><td>L</td></tr><tr><td>✓</td><td>✓</td></tr><tr><td>✓</td><td>✓</td></tr><tr><td>✓</td><td>✓</td></tr></table>	R	L	✓	✓	✓	✓	✓	✓	No	No	No	No	No	No	No	ax: th.	None					
R	L																									
✓	✓																									
✓	✓																									
✓	✓																									
1/1: w/t	2	1/1	w/t	<table><tr><td>R</td><td>L</td></tr><tr><td>✓</td><td>✓</td></tr><tr><td>✓</td><td>✓</td></tr><tr><td>✓</td><td>✓</td></tr></table>	R	L	✓	✓	✓	✓	✓	✓	No	No	No	No	No	No	No	kl.	None	Quality defect: cut bases. Kerley lines in lower right zone.				
R	L																									
✓	✓																									
✓	✓																									
✓	✓																									
2/2: w/s	2	2/2	w/s	<table><tr><td>R</td><td>L</td></tr><tr><td>✓</td><td>✓</td></tr><tr><td>✓</td><td>✓</td></tr><tr><td>✓</td><td>✓</td></tr></table>	R	L	✓	✓	✓	✓	✓	✓	No	No	No	No	No	No	No	sw.	None	Quality defect: distortion of bases due to "flaring". Emphysema in upper zones.				
R	L																									
✓	✓																									
✓	✓																									
✓	✓																									

DESCRIPTIONS OF STANDARD RADIOGRAPHS (continued)

1980 STANDARD RADIOGRAPHES SHOWING	TECHNICAL QUALITY	SMALL OPACITIES		LARGE OPACITIES	PLEURAL THICKENING				STOMACH CONTRAST OPACIFICATION	PLEURAL CALCIFICATION	SYMBOLS	COMMENTS															
		PROFUSION	SHAPE-SIZE		EXTENT	CHEST WALL		DIAPHRAGM																			
						CRESTAL- SCISSOR PLEURASIS	DIFFUSE																				
3/3: a/a	2	3/3	a/a	<table><tr><td>R</td><td>L</td></tr><tr><td>✓</td><td>✓</td></tr><tr><td>✓</td><td>✓</td></tr><tr><td>✓</td><td>✓</td></tr></table>	R	L	✓	✓	✓	✓	✓	✓	No	No	Yes <table><tr><td>R</td><td>L</td></tr><tr><td>✓</td><td>✓</td></tr></table> Width: a-a Extent: 3-3	R	L	✓	✓	No	No	No	h; ih; pt.	Quality defect: radiograph is too light. Honeycomb lung appearance is not marked.			
R	L																										
✓	✓																										
✓	✓																										
✓	✓																										
R	L																										
✓	✓																										
1/1: t/t Costophrenic angle obliteration	1	1/1	t/t	<table><tr><td>R</td><td>L</td></tr><tr><td>✓</td><td>✓</td></tr><tr><td>✓</td><td>✓</td></tr><tr><td>✓</td><td>✓</td></tr></table>	R	L	✓	✓	✓	✓	✓	✓	No	No	Yes <table><tr><td>R</td><td>L</td></tr><tr><td>✓</td><td>✓</td></tr></table> Width: a-a Extent: 2-2	R	L	✓	✓	No	Yes <table><tr><td>R</td><td>L</td></tr><tr><td>✓</td><td>✓</td></tr></table> Extent: 2	R	L	✓	✓	None	This radiograph defines the lower limit for costophrenic angle obliteration. Note shrinkage in lower lung fields.
R	L																										
✓	✓																										
✓	✓																										
✓	✓																										
R	L																										
✓	✓																										
R	L																										
✓	✓																										
2/2: t/t	1	2/2	t/t	<table><tr><td>R</td><td>L</td></tr><tr><td>✓</td><td>✓</td></tr><tr><td>✓</td><td>✓</td></tr><tr><td>✓</td><td>✓</td></tr></table>	R	L	✓	✓	✓	✓	✓	✓	No	No	Yes <table><tr><td>R</td><td>L</td></tr><tr><td>✓</td><td>✓</td></tr></table> Width: a-a Extent: 1-1	R	L	✓	✓	No	No	No	ih.	Pleural thickening is present in the apices of the lung.			
R	L																										
✓	✓																										
✓	✓																										
✓	✓																										
R	L																										
✓	✓																										
3/3: t/t	1	3/3	t/t	<table><tr><td>R</td><td>L</td></tr><tr><td>✓</td><td>✓</td></tr><tr><td>✓</td><td>✓</td></tr><tr><td>✓</td><td>✓</td></tr></table>	R	L	✓	✓	✓	✓	✓	✓	No	No	No	No	No	h; ih; id; ih; tb.	None								
R	L																										
✓	✓																										
✓	✓																										
✓	✓																										
1/1: w/u 2/2: w/u 3/3: w/u	-	-	-	-	-	-	-	-	-	-	This composite radiograph illustrates the mid-categories of profusion of small opacities classifiable for shape and size as w/u.																
A	2	2/2	p/a	<table><tr><td>R</td><td>L</td></tr><tr><td>✓</td><td>✓</td></tr><tr><td>✓</td><td>✓</td></tr><tr><td>✓</td><td>✓</td></tr></table>	R	L	✓	✓	✓	✓	✓	✓	A	No	No	No	No	No	None	Quality defects: radiograph is too light and pleural definition is poor.							
R	L																										
✓	✓																										
✓	✓																										
✓	✓																										

DESCRIPTIONS OF STANDARD RADIOGRAPHS (continued)

1980 STANDARD RADIOGRAPHS SHOWING	TECHNICAL QUALITY	SMALL OPACITIES				PLEURAL THICKENING					STOMACH	COMMENTS
		PNEUMONIA	PNEUMOTHORAX	EXTENT	LARGE OPACITIES (PNEUMONIA, SCISSOR (TELEASTS))	CHEST WALL		DIAPHRAGM	COSTOPHRAGMIC ANGLE OBSTRUCTION	PLEURAL CALCIFICATION		
B	1	1/2	p/a	R L ✓ ✓ ✓	B	No	No	No	No	No	ax; co.	Definition of pleura is slightly imperfect.
C	1	2/1	u/t	R L ✓ ✓ ✓	C	No	No	No	No	No	bu; di; ew; ee; hi; ih.	The small opacities are difficult to classify because of the presence of the large opacities. Note the left costophrenic angle obliteration. This is not classifiable because it does not reach the lower limit defined by the standard radiograph 1/1: u/t.
Pleural thickening (circumscribed)	-	-	-	-	-	Yes	No	No	No	No	-	The pleural thickening present face on, is of indeterminate width, and extent 2.
Pleural thickening (diffuse)	-	-	-	-	-	No	Yes	No	No	Yes	-	The pleural thickening present in profile, is of width a, and extent 2. Not seen into small calcifications.
Pleural thickening (calcification) diaphragm	-	-	-	-	-	No	No	Yes	No	Yes	-	Circumscribed, calcified pleural thickening of extent 2.
Pleural thickening (calcification) chest wall	-	-	-	-	-	Yes	No	No	No	Yes	-	Calcified and circumscribed pleural thickening present face on, is of indeterminate width, and extent 2.

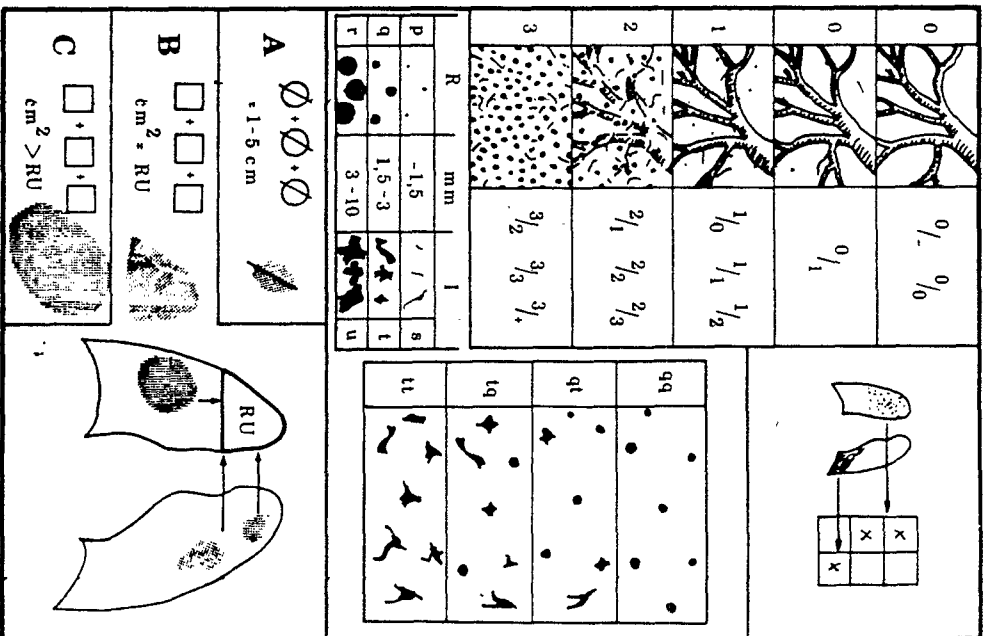
DU 039021

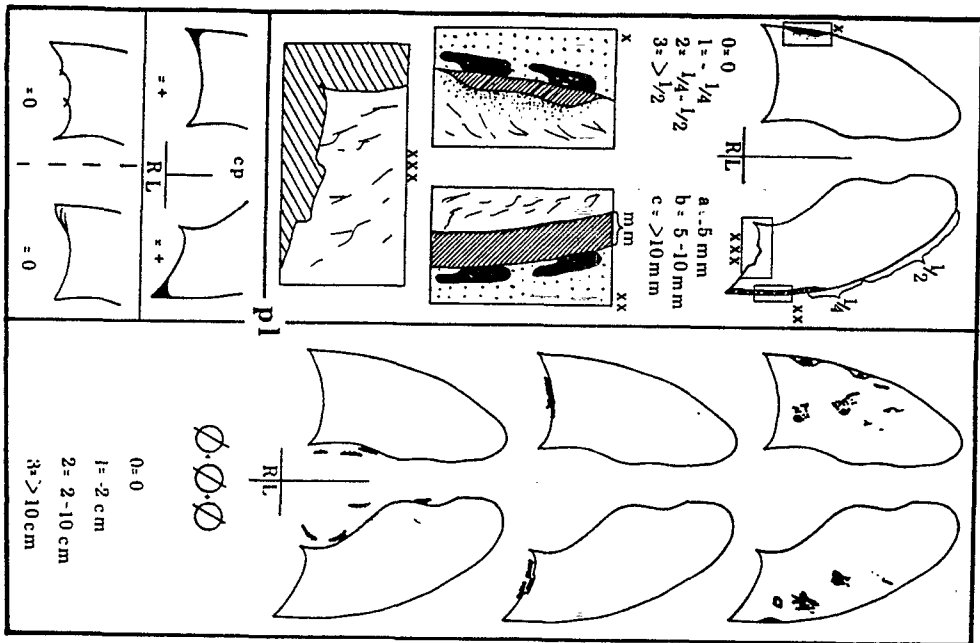
APPENDIX F

DIAGRAMS

The diagrams on the following pages are intended only to provide a pictorial aide memoire to the definitions of the Complete Classification and they do not substitute for the standard radiographs or the written text.

The diagrams representing the symbols provide simple reminders of the symbols to be used, particularly for those whose main language is not English. It is recognised that these diagrams can not possibly illustrate all the manifestations of many of the symbols, for example ca, cp, cd.





ax	ef	kl
bu	em	od
ca	es	od
cn	fr	od
co	hi	pi
cp	ho	px
cv	id	rp
di	ih	lb

TABLE OF DEFINITIONS OF FEATURES

FEATURES		CODES	DEFINITIONS
TECHNICAL QUALITY		1	Good.
		2	Acceptable, with no technical defect likely to impair classification of the radiograph for pneumothorax.
		3	Poor, with some technical defect but still acceptable for classification purposes.
		4	Unacceptable.
PARENCHYMAL ABNORMALITIES			
	<u>Small opacities</u>		
	<u>Profusion</u>	Q/- Q/0 Q/1 1/0 1/1 1/2 2/1 2/2 2/3 3/2 3/3 3/4	The category of profusion is based on assessment of the concentration of opacities by comparison with the <u>standard radiographs</u> . Category Q - small opacities absent or less profuse than the lower limit of category 1. Categories 1, 2 and 3 - represent increasing profusion of small opacities as defined by the corresponding standard radiographs.
	<u>Extent</u>	RU RH RL LD LH LL	The zones in which the opacities are seen are recorded. The right (R) and left (L) thorax are both divided into three zones - upper (U), middle (M) and lower (L). The category of profusion is determined by considering the profusion as a whole over the affected zones of the lung and by comparing this with the standard radiographs.
	<u>Shape and size</u>		
	<u>rounded</u>	p/p q/q r/r	The letters p, q and r denote the presence of small rounded opacities. Three sizes are defined by the appearances on <u>standard radiographs</u> . p = diameter up to about 1.5mm. q = diameter exceeding about 1.5mm and up to about 3mm. r = diameter exceeding about 3mm and up to about 10mm.
	<u>irregular</u>	s/s t/t u/u	The letters s, t and u denote the presence of small irregular opacities. Three sizes are defined by the appearances on standard radiographs. s = width up to about 1.5mm. t = width exceeding about 1.5mm and up to about 3mm. u = width exceeding 3mm and up to about 10mm.
	<u>mixed</u>	n/s n/t n/u n/a n/r s/s s/t s/u s/a s/r t/s t/t t/u t/a t/r u/s u/t u/u u/a u/r	For mixed shapes (or sizes) of small opacities the predominant shape and size is recorded first. The presence of a significant number of another shape and size is recorded after the oblique stroke.

FEATURES		CODES	DEFINITIONS
<u>Large opacities</u>		A B C	The categories are defined in terms of the <u>dimensions</u> of the opacities. Category A - an opacity having a greatest diameter exceeding about 10mm and up to and including 50mm, or several opacities each greater than about 10mm, the sum of whose greatest diameters does not exceed about 50mm. Category B - one or more opacities larger or more numerous than those in category A whose combined area does not exceed the equivalent of the right upper zone. Category C - one or more opacities whose combined area exceeds the equivalent of the right upper zone.
PLEURAL ABNORMALITIES			
	<u>Pleural thickening</u>		
	<u>Chest wall</u>		
	<u>Type</u>		Two types of pleural thickening of the chest wall are recognised: circumscribed (plaques) and diffuse. Both types may occur together.
	<u>Site</u>	R L	Pleural thickening of the chest wall is recorded separately for the right (R) and left (L) thorax.
	<u>Width</u>	a b c	For pleural thickening seen along the lateral chest wall the measurement of <u>maximum width</u> is made from the inner line of the chest wall to the inner margin of the shadow seen most sharply at the paracostal-pleural boundary. The maximum width usually occurs at the inner margin of the rib shadow at its narrowest point. a = maximum width up to about 5mm. b = maximum width over about 5mm and up to about 10mm. c = maximum width over about 10mm.
	<u>Face on</u>	T N	The presence of pleural thickening seen face-on is recorded even if it can be seen also in profile. If pleural thickening is seen face-on only, width can not usually be measured.
	<u>Extent</u>	1 2 3	Extent of pleural thickening is defined in terms of the <u>maximum length</u> of pleural involvement, or as the sum of maximum lengths, whether seen in profile or face-on. 1 = total length equivalent up to one quarter of the projection of the lateral chest wall. 2 = total length exceeding one quarter but not one half of the projection of the lateral chest wall. 3 = total length exceeding one half of the projection of the lateral chest wall.
<u>Diaphragm</u>	<u>Presence</u>	T N	A plaque involving the diaphragmatic pleura is recorded as present (T) or absent (N), separately for the right (R) and left (L) thorax.
	<u>Site</u>	R L	

FEATURES		CODES		DEFINITIONS
<u>Costophrenic angle obliteration</u> <u>Plural calcification</u> SYMBOLS COMMENTS	Presence	T	N	The presence (Y) or absence (N) of costophrenic angle obliteration is recorded separately from thickening over other areas, for the right (R) and left (L) thorax. The lower limit for this obliteration is defined by a <u>standard</u> <u>TECHNIQUE</u>. If the thickening extends up the chest wall then both costophrenic angle obliteration and plural thickening should be recorded. The site and extent of plural calcification are recorded separately for the two lungs, and the extent defined in terms of <u>dimensions</u>. "other" includes calcification of the mediastinal and pericardial pleura. 1 = an area of calcified pleura with greatest diameter up to about 20mm, or a number of such areas the sum of whose greatest diameters does not exceed about 20mm. 2 = an area of calcified pleura with greatest diameter exceeding about 20mm and up to about 40mm, or a number of such areas the sum of whose greatest diameters exceeds about 20mm but does not exceed about 40mm. 3 = an area of calcified pleura with greatest diameter exceeding about 40mm, or a number of such areas whose sum of greatest diameters exceeds about 40mm. It is to be taken that the definition of each of the Symbols is preceded by an appropriate word or phrase such as "suspect", "changes suggestive of", or "apacities suggestive of", etc. - coalescence of small pneumoconiotic opacities - bullae(s) - cancer of lung or pleura - calcification in small pneumoconiotic opacities - abnormality of cardiac size or shape - cor pulmonale - cavity - marked distortion of the intrathoracic organs - effusion - definite emphysema - eggshell calcification of hilar or mediastinal lymph nodes - fractured rib(s) - enlargement of hilar or mediastinal lymph nodes - honeycomb lung - ill-defined diaphragm - ill-defined heart outline - septal (Kerley) lines - other significant abnormality - pleural thickening in the interlobar fissure or mediastinum - pneumothorax - rheumatoid pneumoconiosis - tuberculosis Comments should be recorded pertaining to the classification of the radiograph, particularly if some other cause is thought to be responsible for a shadow which could be thought by others to have been due to pneumoconiosis; also to identify radiographs for which the technical quality may have affected the reading materially.
	Site	R	L	
	Site			
	chest wall	R	L	
	diaphragm	R	L	
	other	R	L	
	Extent	1	2 3	
	Presence	T	N	

UNITED STATES PUBLIC HEALTH SERVICE MODIFICATION OF THE
INTERNATIONAL LABOUR ORGANIZATION
RADIOLOGIC CLASSIFICATION OF THE PNEUMOCONIOSES

	FILM QUALITY		NO PNEUMOCONIOSIS		SUSPECT		PNEUMOCONIOSIS										
TYPE OF OPACITY							SMALL OPACITIES					LARGE OPACITIES*					
QUANTITATIVE FEATURES	UNSAT. FILM	POOR FILM	O		Z		1	2	3	A	B	C					
QUALITATIVE FEATURES							p q r	p q r	p q r								
ADDITIONAL SYMBOLS	ax	ca	cn	co	cv	di	em	es	hi	pl	px	ri	tb	tba	nt	np	
FILM QUALITY	UNSATISFACTORY FILM—IMPOSSIBLE TO READ POOR FILM—DETAILED CLASSIFICATION DIFFICULT																
NO PNEUMOCONIOSIS	O—NO RADIOGRAPHIC EVIDENCE OF PNEUMOCONIOSIS IN LUNG FIELDS.																
SUSPECT OPACITIES	Z—SHADOWS WHICH MAY BE PNEUMOCONIOTIC BUT WHICH ARE INSUFFICIENT FOR THE FILM TO BE PLACED IN ONE OF THE CATEGORIES CLASSIFYING THE SMALL OPACITIES.																
PNEUMOCONIOSIS																	
SMALL OPACITIES	THE CATEGORIZATION DEPENDS ON THE EXTENT AND PROFUSION OF THE OPACITIES. 1 A NUMBER OF OPACITIES IN AN AREA EQUIVALENT TO AT LEAST THE SECOND AND THIRD ANTERIOR RIB SPACES OF EITHER SIDE, AND AT THE MOST, NOT GREATER THAN ONE THIRD OF THE TWO LUNG FIELDS COMBINED. 2 OPACITIES MORE DIFFUSE THAN IN CATEGORY 1 WHICH MAY BE DISTRIBUTED OVER THE WHOLE OR NEARLY THE WHOLE OF THE LUNG FIELDS 3 VERY NUMEROUS OPACITIES DISTRIBUTED OVER THE WHOLE OR NEARLY THE WHOLE OF THE LUNG FIELDS.								THESE ARE CLASSIFIED ACCORDING TO THE GREATEST DIAMETER OF THE PREDOMINANT OPACITIES AND DENOTED BY THE FOLLOWING SYMBOLS p—GREATEST DIAMETER UP TO AND INCLUDING 1.5 mm. q—GREATEST DIAMETER FROM 1.5 mm. UP TO AND INCLUDING 3 mm. r—GREATEST DIAMETER FROM 3 mm. UP TO AND INCLUDING 1 cm. 								
LARGE OPACITIES	A—AN OPACITY HAVING A GREATEST DIAMETER EXCEEDING 1 cm. AND UP TO AND INCLUDING 5 cm. OR SEVERAL OPACITIES EACH GREATER THAN 1 cm., THE SUM OF WHOSE GREATEST DIAMETERS DOES NOT EXCEED 5 cm. B—ONE OR MORE OPACITIES LARGER OR MORE NUMEROUS THAN THOSE IN CATEGORY A WHOSE COMBINED AREA DOES NOT EXCEED ONE THIRD OF THE VISIBLE RIGHT LUNG C—ONE OR MORE OPACITIES WHOSE COMBINED AREA EXCEEDS ONE THIRD OF THE VISIBLE RIGHT LUNG FIELD																
EGGSHELL CALCIFICATIONS (ES)	SPECIFIC CRITERIA FOR IDENTIFYING EGGSHELL CALCIFICATIONS AS EVIDENCE OF SILICOSIS (1) THE PRESENCE OF SHELL-LIKE CALCIFICATIONS MEASURING UP TO 2 mm. IN THICKNESS IN THE PERIPHERAL ZONE OF AT LEAST TWO LYMPH NODES (2) THESE CALCIFICATIONS MAY BE SOLID OR BROKEN (3) IN AT LEAST ONE OF THE LYMPH NODES THE RING-LIKE SHADOW MUST BE COMPLETE (4) THE CENTRAL PORTION OF THE LYMPH NODE MAY SHOW, IN ADDITION, SPECKLED CALCIFICATION. (5) THE AFFECTED LYMPH NODE MUST BE AT LEAST 1 cm. IN ITS GREATEST DIAMETER																
CODE FOR ADDITIONAL SYMBOLS																	
ax—SUSPECT COALESCENCE OF SMALL PNEUMOCONIOTIC OPACITIES ca—SUSPECT CANCER OF THE LUNG cn—CALCIFICATION IN SMALL OPACITIES co—ABNORMALITIES OF THE CARDIAC OUTLINE, TO BE REPLACED BY "cp-car pulmonale" IF THIS CONDITION IS STRONGLY SUSPECTED cv—CAVITY di—SIGNIFICANT DISPLACEMENT OR DISTORTION OF THE INTRA-THORACIC ORGANS em—EMPHYSEMA								es—EGGSHELL CALCIFICATION OF LYMPH NODES hi—APPRECIABLE ENLARGEMENT OF THE HILAR SHADOWS pl—ABNORMALITY OF THE PLEURA px—PNEUMOTHORAX ri—PNEUMOCONIOSIS MODIFIED BY THE RHEUMATOID PROCESS tb—OPACITIES SUGGESTIVE OF INACTIVE TUBERCULOSIS, EXCLUDING THE CALCIFIED PRIMARY COMPLEX tba—OPACITIES SUGGESTIVE OF ACTIVE TUBERCULOSIS nt—NON-TUBERCULOUS INFECTION np—PROBABLY NOT PNEUMOCONIOSIS									
* THE BACKGROUND OF SMALL OPACITIES SHOULD BE SPECIFIED AS FAR AS POSSIBLE.																	
CATEGORY 1				CATEGORY B				CATEGORY C									
RADIOLOGICAL APPEARANCE		VISUALIZED APPEARANCE		RADIOLOGICAL APPEARANCE		VISUALIZED APPEARANCE		RADIOLOGICAL APPEARANCE		VISUALIZED APPEARANCE							
																	

FIGURE 1